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PRINCIPLES OF HEALTH EDUCATION APPLIED

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Principles of Health Education Applied

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PRINCIPLES OF HEALTH EDUCATION APPLIED

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III

Dedicated to

STUDENTS OVER THE YEARS

HEALTH EDUCATION AND PHYSICAL EDUCATION DEPARTMENT
TEACHERS COLLEGE, COLUMBIA UNIVERSITY

PREFACE

The increasing responsibility of schools and colleges for health education challenges the attention of persons in administrative and executive positions as well as teachers and supervisors who assume the task of putting the program into effective operation. Thus both administrative and staff officers need principles that serve as the foundation for basic planning and directed action.

Perhaps health education needs wisely conceived principles even more than many other activities of the school. The older subjects enjoy the sanction of traditional acceptance, and the school represents the important community agency primarily concerned with the development of these subjects. Because of its comparatively recent origin and diversified elements, health education has not yet attained the position of respectability accorded many of the academic subjects; moreover, numerous official, voluntary, and private agencies in the community sponsor health activities that parallel those in educational institutions.

The crux of the problem appears to lie in a clear definition of the terms *education*, *services*, and *treatment*. Most authorities agree that schools and colleges have a definite responsibility with respect to health *education* if experiences therein lead to richer and fuller lives for youth. Confusion often arises in the matter of health *services*. Most persons believe that various service activities (health examinations, follow-up procedures for the correction of remediable defects, and others) not only constitute valuable educational experiences in helping youth to develop wise and intelligent self-direction, but justify the expense involved because the student who is unencumbered by physical defects or limitations progresses in school faster and with greater satisfaction than the child suffering from remediable defects and lowered vitality. Others insist that health-service activities are functions neither legally nor morally belonging to the schools, that society has established other official agencies (health and welfare departments) to care for the indigent, and that parents and guardians financially able to do so should consult family physicians and dentists on matters of this kind.

General agreement restricts the school or college from providing health *treatment*, yet some educators support the principle that treatment constitutes a responsibility of the educational institution if other resources in the community fail to give the necessary aid. On the other hand, accusation arises that many schools and colleges already have usurped the prerogatives of the home and the private practitioner by applying unwarranted health treatment.

Doubtless the controversy will become no less acute in the years ahead with expanding governmental and voluntary agencies and with community-planning groups attempting to allocate specific societal functions to the particular institution best equipped to assume the responsibility for them. The fact remains that school and college health services more closely approximate activities carried on by boards of health and by private health practitioners than most of the other programs normally associated with educational institutions.

This fact clearly indicates the need for well-defined principles of health education. For example, should boards of education conduct periodic health examinations of school children if family physicians and dentists give similar examinations or if boards of health are equipped to render this service? Duplication of effort often leads to professional jealousies and to the unwise expenditure of public funds. Again, some persons question the justifiability of health examinations conducted by school physicians which represent mere inspections and in which the school physician fails to diagnose abnormalities but refers the case to the family physician. Many boards of education follow the policy that school physicians may not diagnose an ailment or defect and that school treatment shall be restricted to first aid and sudden illness. Opponents of this policy question the wisdom of expending public funds for the employment of school physicians who depend on family physicians for the diagnosis and who render only first-aid treatment—techniques familiar to all registered nurses and to many qualified teachers. Existing policies, continue the opponents, tend to cheapen the medical profession in the eyes of the general public and to increase unnecessarily the public tax burden.

Perhaps the most vital spark of controversy arises in the degree of treatment assumed by schools and colleges on the basis of educational responsibility. In recent years more boards of education have furnished glasses for children with defective vision than ever before, and dental chairs installed in many schools facilitate the cleaning of teeth or the extraction of aching molars. Those who question the role of education to encompass the correction of remediable defects fear that

the extension of treatment in future years may lead the schools into direct conflict with official health and welfare organizations and with private medical and dental practice.

Throughout the history of its development, education has increasingly accepted responsibilities formerly associated with the home and with other institutions of government. At the time and place of its inception each new activity or program became a part of the school in accordance with the peculiar alignment and operation of economic, political, and social forces. As a governmental agency for the most part, education follows stereotyped patterns of traditional practice. Thus a program started to meet the contemporary needs of a given community usually follows its inaugural pattern for years if not for generations, despite marked changes in societal management or scientific discovery that may clearly indicate desirable modifications in technique or a recasting of original values.

Notable changes have occurred in providing a wholesome school environment and in improving the quality of health instruction. Expert school architects and state building codes now help to ensure an educational structure of beauty as well as adaptability to purpose, with spacious play areas and rooms designed to promote the growth and developmental needs of youth. Acceptance of approved maintenance standards have gradually led to the employment of trained custodians who appreciate both their educational and service functions. The school program has begun to take on the appearance of healthful school living as principals and teachers give increased attention to the individual differences in children and to interspersing work with periods of relaxation or play. Health instruction now follows the altered plan of utilizing the normal life experiences of youth to improve personal and group behavior in place of routine lessons in physiology and hygiene. Most of these things have happened within the brief span of one generation.

Of necessity, *Principles of Health Education Applied* takes into account the historical development of the program, describes its present status, and evaluates future trends in light of the operating forces that shape human affairs. Properly conceived, history reveals more than a chronicle of past events; it shows how the forces responsible for a given event were aligned at its inception, how the enterprise is progressing at present, and what may be expected in future years. This book attempts to indicate the economic, political, and social forces that gave rise to the various activities included in modern programs of health education, to explain the degree to which these activities con-

form to the existing societal pattern, and to suggest probable future developments.

Most of the basic facts contained in this volume were selected from reliable published documents or from observation of current practices. To list all of these sources would fill several pages and would mean running the risk of omitting specific publications or committees that should have been included. The responsibility for analysis and interpretation of facts, especially with respect to controversial issues, rests solely with the author.

The book is intended for use by students of health education who need to acquire for themselves a foundation of principles upon which to construct the details of their specialized competence. The persons concerned with health education in schools and colleges include a wide range of individuals and groups: classroom teachers engaged directly or indirectly in health instruction; school-health specialists largely responsible for program content and operation; administrative and supervisory personnel who organize and implement the program; school architects, custodians, and engineers who render important services in providing a healthful school environment; boards of education and trustees who give sanction to health procedures recommended by educational authorities; parents whose children receive the benefits of an efficient school-health program; official health departments, voluntary organizations embracing health objectives, and private practitioners with whose policies the school program must be coordinated; and citizens generally who pay the educational bills and who assume the final responsibility for the acceptance of all educational activities. All these persons need basic principles to ensure the efficient direction of a sound health program designed for the schools and colleges of an American democracy.

The author is indebted to many graduate students and colleagues, both at Teachers College, Columbia University, and in the field, for suggestions and criticisms. The following persons, especially, gave valuable assistance in the development of specific chapters: Dr. Herbert Walker, Professor of Health Education, Teachers College, Columbia University, with Chaps. 1, 3, 4, 5, 6, and 12; Jess Hardin Wheeler, graduate student, Columbia University, with Chap. 2; Dr. Josephine L. Rathbone, Associate Professor of Health and Physical Education, Teachers College, Columbia University, with Chap. 7; Pauline Brooks Williamson, Secretary, The American Association for Gifted Children, with Chap. 9; Dr. Harry A. Scott, Professor of Health and Physical Education, Teachers College, Columbia University, with

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CLIFFORD LEE BROWNELL

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CONTENTS

Preface vii

1. Foundations of Health Education 1

Health as a Living Subject. Evolution of the Term "Health Education." Definitions of Health. Definition and Scope of Health Education. Adopting a Basic Point of View toward Health Education. Responsibilities of Education in a Democratic Society. The Place of Health Education. Legal Aspects of Health Education. Board-of-education Powers and Responsibilities. The Health Specialist.

2. Health Problems in American Democracy 21

Problems Arise from Various Sources. Conservation of National Vitality. Population Shifts and Public-health Education. Revelations of Vital Statistics. Increase in Life Expectancy Creates New Problems. Physical Fitness and Health Care. Selective Service and Public Opinion. Education and Tuberculosis Control. Increasing Death Rates from Heart Disease. Medical Research and Cancer Control. New Attacks on Pneumonia. Infantile Paralysis or Poliomyelitis. Accidents and Safety Education. Reducing the Number of Health Fads. Improving the Quality of Nutrition. Industrialization and Mental Health. The Tragedy of Inadequate Dental Care. Health Education and Self-medication. Selecting a Competent Medical Adviser. Medical Economics and Social Trends. The Problem of Organized Medical Care. Types of Voluntary Health-insurance Plans. National Health Insurance—Compulsory or Voluntary? Brief Summary. Social Progress and Relief for Incurables. Problems for Education.

3. The Nature of Growth and Development 63

The Broad Viewpoint. Definitions and Scope. Historical Implications. Influence of Heredity. Influence of Nationality. Influence of Geography. Influence of Intelligence. Influence of Economic and Social Factors. Height-weight-age Tables. Influence of Individual Differences. Physique. Rates of Growth. Seasonal Growth. Some Physical Comparisons between Children and Adults. Nutrition and Growth. Glands and Growth. Sleep, Rest, and Growth. Disease, Accidents, and Growth. Sex Differences. Emotional Control. Early Childhood. Later Childhood. The Adolescent. Social Development. School Responsibility.

4. The Organization of Resources for Health 107

Variety of Health Agencies. Official Organizations. Voluntary Organizations. Private Health Agencies. Professional Associations. Organized Public Health. The Federal Government and Public Health. State Governments and Public Health. Local Governments and Public Health. General Summary of Organized Public Health. Health Activities of Voluntary Organizations. Classification of Voluntary Health

Agencies. Development of Voluntary Health Organizations. Services Rendered by Voluntary Agencies. Limitations of Voluntary Agencies. The American Red Cross. Endowed Foundations. Need for the Coordination of Agencies. The Schools as an Example of Needed Health Coordination. Techniques of Community Organization.

5. School Organization for Health 130

The Need for Effective Planning. General Outline of the School-health Program. Responsibilities of Boards of Education. Instruction, Services, and Treatment. Board-of-education versus Board-of-health Control. Responsibility of the School Administrator. The Selection of a Competent School-health Administrator. Cooperation with Outside Agencies. Health Councils.

6. Health Services and Guidance 148

Education and Services. Definition and Scope. Periodic Health Examinations or Appraisals. Legislation Relating to Health Examinations. Health Examinations and Development. Health-examination Items. Administrative Principles of Health Examinations. Health Histories. Health-examination Records. Dental Examinations. Psychological Examinations. Observation by Teachers and Nurses. Immunization and Vaccination. Follow-up Services. Community Resources for Correcting Defects. First Aid and Care of Sudden Sickness. Health Rooms and Rest Rooms. Health Services for Employed School Personnel. Responsibility for School-health Services.

7. Education of the Handicapped 182

The Handicapped, Exceptional, or Special Student. Administrative Principles. Proposed Classification. Deaf and Hard of Hearing. Blind and Partially Sighted. The Crippled and Posture Defective. Speech Defectives. The Malnourished. Cardiac Defectives. The Tubercular. The Epileptics. Low Intelligence. Emotionally Atypical. Socially Atypical. Responsibility of Government. Basic Factors for Consideration.

8. Healthful School Living 209

Definition and Scope. Contributions of Healthful School Living to Health Education. Housing and Health. Coordinate Responsibilities. Providing a Healthful School Environment. Maintaining a Healthful School Program.

9. Health and Safety Instruction 234

Explanatory Introduction. Brief Historical Summary. Definition and Purpose of Health and Safety Instruction. Organization for Health and Safety Instruction. Relation of Purpose to Interests and Needs. Cooperation with Home and Community. Direct versus Incidental Teaching. Health and Safety Instruction in Elementary Schools. Health and Safety Instruction in Secondary Schools. Health and Safety Instruction in Colleges and Universities. Health and Safety Instruction in Adult Education. Teaching Methods. Basic Principles of Method. The Program of Study. Teaching Materials. The Physician, Dentist, and Nurse as Health Teachers.

10. Relationships between Health Education and Physical Education . 268

The Problem Examined. Recognition of Relationships. Avowed Purposes of Physical Education. Physical Education and Physical Training. Relationships between Physical Education and the Health Services. Relationships between Physical Education and Healthful School Living. Relationships between Physical Education and Health and Safety Instruction. Physical Education in Elementary Schools. Physical Education in Secondary Schools. Physical Education in Colleges and Universities. Physical Education and Athletics. Physical Education and Recreation.

11. Techniques of Evaluation 299

Current Trends in Evaluation. The Statistical and Clinical Approaches to Evaluation. Validity, Reliability, and Objectivity. Types of Evaluation Techniques. Evaluation of Administrative Policies. Evaluation of Health Services. Evaluation of Healthful School Living. Evaluation of Health and Safety Instruction.

12. Professional Preparation for Health Education 320

The Broad Viewpoint. Professional Schools and In-service Education. State Responsibility and Certification. Elementary Classroom Teachers. Health Teachers in Secondary Schools and Colleges. The Health Supervisor or Coordinator. The Physical Educator. Teachers of Biological Science, Home Economics, and Others. Health-services Personnel. (Guidance Counselors. School Physicians and Dentists. School Psychiatrists and Psychologists. The School Nurse or Nurse-teacher. Dental Hygienists. Cafeteria Directors. The Custodian.) The Administrator or Executive.

Index 355

CHAPTER 1

FOUNDATIONS OF HEALTH EDUCATION

Health as a Living Subject. A person interested in health education recognizes at once the close relationship existing between the knowledge acquired or the attitudes formed and his own life or the welfare of his friends. To appreciate fully the significance of these implications a broad understanding of the biological and social sciences is desirable, although a willingness to think through persistent health problems and to formulate a decisive course of action relating to them transcends the mere accumulation of factual information.

Thus the student of health education must acquire an awareness of health problems as they exist, evaluate accurately the forces operating to support or restrict the current efforts to meet these issues, and accept with intelligence the responsibilities imposed upon him as a good citizen or professional person in helping to solve the health problems that lie ahead.

The materials included in this chapter serve to illustrate certain events associated with the foundations of health education in America and to point out some of the responsibilities of education in dealing with these issues.

Evolution of the Term "Health Education." Aside from the practice of medicine, which enjoys a noteworthy history quite its own, the evolution of health education presents a panorama of spectacular achievements. The term itself belongs to the past quarter century yet its implications extend back into the early beginnings of the human race.

The study of all social groups shows a marked desire to control disease and to improve health. Many of the early taboos and folkways contain elements of hygiene, especially sanitation. Out of these customs emerged the medicine man, the various healing arts, and finally that vast wealth of human knowledge belonging to medical science and public health. Such men as Plato and Aristotle advocated the appointment of health officers for all "cities," while Dickens, Victor Hugo, and others

wrote important documents favoring movements designed to protect the lives of growing children.

In 1647 the General Court of the Massachusetts Bay Colony passed the first health regulation in this country, imposing quarantine rules to prevent the spread of yellow fever. The first local board of health appeared in Baltimore, Md., about 1793. By far the greatest organized developments in child health and welfare came after 1900. Prior to the present century interest in public health was largely casual and ineffective.

Improved social and economic conditions in England paved the way for many new health movements, which spread rapidly to America. England passed the Provision of Meals Act in 1906, the forerunner of modern school lunches. In 1907 England placed responsibility for the medical inspection of school children with boards of education. By 1908 the British Parliament had enacted the Children's Charter, which aimed to codify and improve earlier statutes relating to the health of youth. Between 1900 and 1909 nearly all of the separate states either established initial legislation on public health or revised existing statutes.

The Federal government soon became active in health measures. The Children's Bureau, within the Department of Labor, began in 1912 to investigate and report on matters concerned with child and material welfare. The Sheppard-Towner Act of 1921 strengthened the activities of the Children's Bureau, giving to it jurisdiction over state aid for use in maternal and child care. President Hoover's 1930 White House Conference on Child Health and Protection established excellent health standards that might have exercised a profound influence on national welfare had not the depression years and changed political goals directed public interest into other channels.

Since 1900 the number of voluntary health agencies has increased steadily until nearly every community now enjoys the benefits of several of these organizations whose chief purposes relate to the health and protection of children and adults. Actually the term "health education" came into common use after 1920. Health education includes a variety of activities originally established as separate programs, such as medical inspection, temperance, physiology, the hygiene of instruction, personal hygiene, sanitation of the school plant, and others.

Perhaps the decade following the First World War set the stage for the development of health education. Surely the draft statistics of 1917-1918 portrayed an alarming number of physical defects among the nation's youthful male population. Public interest became aroused to the need for improved health, and economic prosperity made available the

necessary funds. Many persons in physical education who had witnessed the criticism leveled at their program when the draft statistics became known turned to health education as a possible means of rendering greater public service. A few physicians and public-health workers entered the rapidly growing field. Home economists, biologists, social scientists, classroom teachers, persons engaged in welfare activities, and others swelled the ranks of health education—and thus a new profession was born.

For progress in the early days of health education, special credit belongs to the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association. Under the able leadership of its first chairman,[1] the Joint Committee pioneered in formulating plans, establishing goals, and furnishing valuable written materials that gave direction and substance to health education in the schools and colleges. This Committee continues to exercise effective leadership, although its greatest influence came at the time of most urgent need.

Definitions of Health. Definition serves the useful purpose of explaining the range and scope of the item under consideration and in establishing its juxtaposition with other items of similar nature. Thus the definitions of health that follow should not be confused with the term "health education" described in a later section. Further, the author of a definition reveals his point of view based largely upon his philosophic and technical backgrounds.

The conventional dictionary or encyclopedia usually defines health as freedom from disease or pain. This definition explains by contrasting the person enjoying normal health with the unhealthy person sick in bed, convalescing from illness, or suffering the discomfort caused by accidents. The physician often views health as a normal functioning of the body organs and systems.

Williams, a prolific and forceful writer on health subjects, first proposed the broader point of view concerning the meaning of health. His position has gained wide acceptance among educators in recent years. He defines health as that quality of life which enables the individual to live most and to serve best.[2] Some critics of Williams point out that this definition lacks sufficient specificity, that it embraces the

[1] Dr. Thomas Denison Wood became the first chairman of this important committee.

[2] Jesse Feiring Williams, "Personal Hygiene Applied," 8th ed., p. 2. Philadelphia: W. B. Saunders Company, 1946.

desired outcomes of all education and hence might serve better as a definition for education than as one for health alone. Nevertheless it would appear that Williams has proposed an excellent definition for health, especially when he explains further how health represents a quality rather than a quantity; good living today best guarantees good living tomorrow; man lives best when he loses himself in objective causes that lie outside himself; most persons live below their best levels of health attainment; health for health's sake represents a worthy motive only for the person sick in bed (and he forgets the motive as soon as he recovers); physical aspects of health alone are not enough—mental and social values deserve consideration; and the needs of an individual correspond with the needs of a nation—vigor, vitality, and progress toward a better way of living.

In the final analysis one must accept the definition of health that appears most satisfactory to him and, having accepted a definition, put forth his best efforts to secure the blessings of Hygeia for himself and for others.

Definition and Scope of Health Education. Some years ago Wood proposed a definition for health education which has withstood numerous pedagogical changes and which appears even sounder today than when it was written. Wood explained that health education represents the sum of all experiences in school and elsewhere that favorably influence habits, attitudes, and knowledge, related to individual, racial, and community health.[3]

In this definition observe the proposed relationship between the school, home, and community. Note further that health education embraces the concept not only of acquiring knowledge but also of utilizing this knowledge to develop proper habits and attitudes toward wholesome living. The activity-experience curriculum became popular several years after Wood proposed his definition, yet he appears to have foreseen the future by referring to the "sum of experiences." His last phrase, "relating to individual, racial, and community health," suggests at once that this quality has implications beyond personal welfare, extending even to international problems.

The *scope* of health education embraces a group of activities usually brought together for convenience into a few large and descriptive categories. A commonly accepted classification is (1) healthful school living, (2) health services, and (3) health and safety instruction.

[3] T. D. Wood and C. L. Brownell, "Source Book in Health and Physical Education," p. 57. New York: The Macmillan Company, 1925.

Healthful school living includes the appropriate measures taken by educational authorities to ensure a wholesome environment for pupils and employees. In brief this classification deals with the hygiene and sanitation of the school plant, certain aspects of school feeding, the organization of classes and school experiences so as to promote health and prevent undue fatigue, pleasant associations between the learner and those responsible for his instruction, and protective administration of the school. Healthful school living includes those things done *for* pupils and employees to improve or protect their health.[4]

Health services represent the combined efforts of physicians, dentists, nurses, teachers, psychologists, parents, and others to determine health status, prevent disease, and obtain the means of correcting remediable defects among students and school personnel. Within the category appear the periodic health examination and inspection, vaccination and immunization, various aspects of school feeding, the follow-up procedures commonly employed, first aid for the injured, and care of sudden sickness. Briefly stated, health services comprise those activities applied *to* students and employees to improve or protect their health.[5]

Health and safety instruction describes the organization of learning experiences directed toward the development of favorable health and safety knowledge, attitudes, skills, and practices.[6] This classification relates primarily to the direct and incidental teaching or learning experiences.

No complete health-education program is adequate that fails to give due recognition to the activities embodied in all three classifications (healthful school living, health services, and health and safety instruction) since each of them possesses unique elements wherein the child learns to react favorably to his immediate environment.

Two further definitions may prove helpful in clarifying the scope of health education: (1) *school-health education* takes place in the school or through the efforts organized and conducted by school personnel; and (2) *public-health education* takes place in the home and community, conducted by persons other than school employees.

Adopting a Basic Point of View toward Health Education. In the beginning those who migrated to this country sought freedom and opportunity. Throughout the years these two virtues have characterized American society. Freedom and opportunity represent fundamental

[4] A more complete discussion of healthful school living appears in Chap. 8.

[5] See Chap. 6 for further discussion of health services.

[6] Health and safety instruction are explained more fully in Chap. 9.

desires of mankind. Circumstances advantageous to the exercise of freedom and to the achievement of success in economic and social affairs depend largely upon the natural resources of a country and the strength of character exemplified by its citizens. The combination of biological inheritance and rich natural resources led to the formation and perpetuation of a democratic type of government in America unparalleled by other nations of the world.

Principles of early government maintained that men should live together in peace and comfort with liberty and justice for all. Within reasonable limits these principles have endured. A democratic form of government requires people to substitute self-discipline for oppression and to respect the inalienable rights of human personality. Education plays an important role in helping children to understand our democratic society and in providing them with the necessary skills and techniques to create a better world in which to live.

As the complexities of modern civilization increase, government assumes greater responsibilities in regulating the lives of a people. In this country the powers of government gradually have extended toward alleviating human ills, enriching the economic and social welfare of citizens, and preventing individual and social maladjustment. Realization of these worthy objectives demands close articulation and full cooperation between local, state, and Federal governments.

But governmental agencies need the assistance of other community organizations to achieve optimum results. Philanthropic or voluntary groups constantly blaze new trails for governmental units to follow. Private enterprise sets standards in advance of those provided at public expense. Commercial organizations often render services at a fixed price to meet the expressed or latent desires of a social group.

Discoveries and inventions constantly influence the lives of people, creating new problems for governmental experts and students of social policy. Machine production shortens the hours of laborious toil, concentrates the population into great metropolitan areas, increases the quantity and variety of consumer goods, and provides more leisure for the average person. Machine production also encourages migration from rural areas to crowded cities, influences family life by decreasing the status of the home as a fundamental social institution, and creates a fluctuating standard of living for many workers because of periodic unemployment.

The impacts of socioeconomic reconstruction have led to the initiation of numerous governmental and specialized services. Although these services began during the colonial period, their importance in

terms of human value and financial outlay rests with the present century.

Examples of these changes are legion. Public libraries have grown from incidental book collections to great educational institutions of paramount significance in molding the lives of children and adults. Public health began as a means of controlling the spread of communicable disease, but now it renders important functions in aiding maternal and child care, extending education and services in matters of social hygiene, promoting industrial hygiene, studying problems of nutrition, and conducting research in other specialized fields. Public welfare soon developed beyond its initial responsibility for asylums and poorhouses to include direct relief to the poor and unfortunate, work relief to the unemployed, child welfare, assistance to the aged, correction of defects among the indigent, and activities of similar nature.

The extension of public enterprise requires a gradual though persistent increase in specialized personnel and a larger portion of tax funds. Public recreation has grown from homely sandboxes and bleak playgrounds to an organized program of sports events, arts and crafts, camping, dramatics, music, group discussions, and related activities conducted in community centers, parks, schools, and other recreational areas.

Public education constitutes one of the largest national enterprises. At first designed for children of elementary-school age, public education quickly extended its functions to include the kindergarten, secondary school, adult education, municipal university, state university, teachers college, and others. In increasing its variety of offerings, public education soon organized classes for the handicapped and gifted, facilities for guidance and placement, health services of numerous types, shops for industrial arts, cooking and sewing laboratories, physical-education gymnasiums and playgrounds, recreational activities of extracurricular nature, and others.

But despite remarkable progress in social planning, basic policies often remain confused, and pressure groups continue to support vested interests irrespective of total community welfare. A kind of pioneer individualism seems to prevail among communities with each one cherishing the right to meet its own needs in its own way. Still worse, official departments of government often vie with each other to gain public favor. Frequently a new social activity is assigned to an existing public agency only because this agency happens to have funds available or the most aggressive leadership. Soon another organization of government may attempt to take over the responsibility, and controversy develops

between the two organizations with other agencies joining in the struggle. The use of public-service positions as political plums for unqualified personnel continues to blight the social scene. A social-service organization may attempt to expand its program without reference to the coordinated balance required among well-conducted public agencies. Such procedures result in unnecessary competition, duplication of effort, neglect of important welfare areas, and economic waste.

The stern necessity for sound basic policies relating to the organization of various social agencies deserves the attention of trained experts in the years ahead. Already many of the established organizations have plans for enlarging their services. New demands associated with every reconstruction period obviously lead to the formation of additional agencies or to even greater confusion among those presently in operation. In such a situation the only way to avoid conflict and waste resides in the formulation of systematic principles which finally evolve into a series of public policies.

The factors responsible for present conditions are not altogether clear. Perhaps the two most significant elements relate to an unenlightened and apathetic public and to a limited number of professional persons who lack adequate preparation for the positions they hold. On the one hand some communities appear unwilling to support public social services according to standards recommended by experts in the various fields. These communities often have difficulty in maintaining professional staffs of teachers, nurses, librarians, and social workers qualified for their work in terms of approved standards. On the other hand professional persons sometimes fail to provide the type of articulated services the public has the right to expect. Professional workers too often narrowly align themselves with their local, state, and national associations without giving due consideration to personnel in related fields of the same community. Professional affiliation should never take precedence over an abiding and intelligent interest in activities of similar nature, conducted by persons in another local governmental agency —both are equally significant for the optimum success of the total community program of social services.

Responsibilities of Education in a Democratic Society. Hand in hand with the development of government, the need arises for expanding public education. In recent years the emphasis on problems associated with improved democratic living has partially displaced the former stress on subject-matter knowledge. Most schools now teach the child

how to maintain sound health, how to live happily in the home, and how to acquire a self-reliant and social-minded personality. It appears self-evident that youth should learn to adjust himself properly to the pattern of democratic society and to do his part in making the world a better place in which to live.

Since the schools assume a major responsibility in the educative process, much depends on how they are organized and conducted. Education must develop the potentialities of mind and body if life is to be both enjoyable and useful. The essentials of ethical character deserve considerable emphasis as the youth acquires a love for beauty, increases his creative powers, and learns to appreciate the worth of his fellow man. Education provides countless experiences enabling the youth to meet new and challenging situations that draw out his latent talents of leadership. Through these experiences he acquires knowledge and develops skills that serve him both now and in later years.

The complexities of modern civilization further demand that school committees become actual boards of education whose vision encompasses the educational needs of the entire community. In this setting school administrators utilize all the resources of the community to provide the necessary broad range of educational experiences, and teachers recognize their responsibility to engender skills and appreciations relating to the total concept of normal growth and development.

The problems of health education present unique opportunities for the establishment of sound policies of administrative organization. A generation ago the avowed purposes of the schools were relatively simple and direct. Changed social patterns and new services bring with them obligations heretofore unencountered. With the possible exception of recreation, no other school development presents so many problems as health education, largely because several official and voluntary agencies in the community have a vested interest in these problems.

What, for example, is the school's responsibility with respect to the large number of pupils with remediable physical defects? Shall school physicians diagnose the conditions found, apply treatment at public expense, and thus invite criticism from private practitioners and boards of health? Should the board of education ever adopt a health regulation that conflicts with policies of other departments of government such as health and welfare?

Similar questions arise with respect to children who attend school without adequate food and clothing. Are schools expected to engage in the restaurant and clothing businesses? While most persons would agree that schools have an important function to perform in determining

social policy, does this mean that schools shall assume functions rightfully belonging to another agency either by legal enactment or moral ethics?

Oftentimes the problem becomes so complex that a clear-cut solution must await further community deliberations. Efficient administration of certain services may require the combined efforts of two or more community agencies, each with its responsibilities clearly defined. Acceptance of the general principle that education must offer each individual the opportunity to develop his optimum potentialities does not mean that all services and experiences shall be confined within the structural organization of the school. Rather this principle implies that school authorities shall utilize the resources of the community and assist in molding public opinion to obtain the desired results. Applied to a case of defective tonsils, this policy might mean that the case should be referred to the proper authorities and then followed up to ensure appropriate action rather than for the school to spend its tax funds for a tonsillectomy. Adoption of sound basic policies enables the school to coordinate public services for the welfare of youth without arrogating to itself functions belonging to the home or to other institutions designed to protect the health and welfare of children.

The suggestions above relating to community cooperation apply with equal force to the articulation of activities within the school itself. A complete health program requires the united services of many persons connected with the school; few health problems find their true solution through the efforts of an individual teacher or principal. A child's personality problem discovered by a given teacher may need the combined efforts of the principal, attendance officer, nurse, and psychiatrist—as well as of the parent.

The Place of Health Education. Within recent years most schools have adopted some sort of health program designed to assist the child in conducting his own health affairs and in contributing to the welfare of society. All acceptable lists of desired educational outcomes include health as a primary objective. The school has a splendid opportunity to engender rules of healthful living among students since each youth, from early childhood through adolescence, spends several hours per day for approximately one-half the days in the year under the supervision of school authorities. The school rightfully contributes to the development of healthy, happy, and successful men and women. This refers to assistance given pupils in solving their own health problems, the ideals of personal and community hygiene formed through effec-

tive instruction, and the services provided to ensure a healthful school environment.

Sound program planning considers the total child and the mutual interrelationships of physical, mental, and emotional development. School-health policies will not only conform to best practices recommended by experts in the field, but also supplement those adopted by the community which the school is expected to serve. Obviously the school-health program comprises several activities, each with a distinctive and definite purpose. None of these can function properly without the necessary coordination of all health activities, and the program itself brings desired results only when proper administration directs health education toward the fulfilment of the avowed objectives established for the school as a whole.

Legal Aspects of Health Education. A rapidly increasing population and the general social progress of the present century gave rise to the need for official acts relating to the health of children and adults. These acts include laws, regulations, court decisions, and attorneys' general opinions. Likewise these provisions appear, with certain modifications, on the three levels of government—Federal, state, and local. Just as the Federal government delegates numerous responsibilities and authorities to the various states, in like manner states assign to local governments the authority to establish provisions for the health of their citizens. In fact, the state occupies a crucial position since all rights (responsibilities and authorities) reside in the state unless specifically delegated to the Federal government by the Constitution.

Perhaps the simplest way to explain the official aspects of health is to use state government as an example. *Laws* are established by the legislature and affect all persons residing within the commonwealth. Thus all states have laws relating to instruction in the deleterious effects of alcohol, and some states have laws which require periodic medical inspections of public-school pupils. Laws may be either mandatory or permissive. A mandatory law *compels* persons to act in accordance with the statute, whereas permissive legislation *allows* a local municipality to use public funds for a specific function.

A duly authorized department of government such as the state education department or state health department may establish *regulations* within the framework of laws that prescribe the functions and obligations of a department. Such regulations have the authority contained in laws. Thus state health departments may adopt regulations to protect

drinking water, and state education departments may impose regulations concerning the erection of new school buildings.

The various courts render *decisions* that interpret laws or regulations. In the absence of legal enactments, these decisions establish precedents that serve as guides in later controversies of similar nature.

An attorney general renders an *opinion* with reference to the interpretation or implication of existing statutes. Should anyone express doubt concerning the validity of an opinion given by an attorney general, the matter is taken to the courts for a decision or attempts are made to pass a law on the subject.

The above description makes no pretense to explain fully the numerous ramifications of laws, regulations, court decisions, and attorneys' general opinions. The complexity of these items and degree of variation among the different states preclude such a treatise in this brief discourse. The above explanation merely sets forth the basic principles underlying the legality of factors associated with health in the school and community.

The need for recodifying health laws in the various states and reconciling laws, regulations, and other mandates represents an acute problem. For example, should boards of education or boards of health assume responsibility for the health examination of school children? Sometimes the laws fail to delegate this responsibility to one department or the other. If the law specifies "medical inspection," should this term be interpreted as synonymous with "health examination"? Occasionally the two terms are used synonymously; at other times they refer to different types of service. If one regulation defines the scope of health examinations and another relates to health education (meaning health instruction), does this imply that health examinations are a part of or separate from the health-education program established for a given school? If a mandatory statute directs instruction in the deleterious effects of alcohol whereas a state education department regulation deals with health instruction, should temperance be regarded as an integral part of health instruction? Such problems often lead to ambiguity in interpretation and controversy in conduct between established departments of government.

Board-of-education Powers and Responsibilities. Most state legislatures give to the state education department and local school boards broad powers in conducting the affairs of public education. The degree to which educational authorities utilize these powers depends largely

upon the leadership of persons employed to organize and conduct the schools.

Powers and responsibilities of boards of education tend to broaden in scope with the passage of years and to become confused. The following inconclusive and random items illustrate the disagreement existing in current educational policy: School authorities should accept full responsibility for all public educational activities conducted within the community. The educational plan should meet the needs of all neighborhood groups. A recreation commission that coordinates the school, park, and other public agencies represents a desirable trend toward the unification of leisure activities. Public schools, public libraries, and public recreation should be administered by educational authorities. Schools should assume full responsibility for the health instruction of and health services for all pupils. School authorities should accept the definite obligation to provide a hygienic school environment for pupils and to supervise the health of teachers and other employees. Except in cases of first aid and care of sudden sickness, agencies other than the school should provide medical diagnosis and treatment for school children and employees. Schools should expand their adjustment programs to include the employment of trained attendance workers, guidance counselors, and the establishment of child-guidance clinics. School authorities should assume responsibility for juvenile placement in communities where adequate services do not exist under other auspices. Health services for indigent children should be furnished by agencies other than public schools. School authorities should stimulate community action to establish appropriate agencies for removing social and physical handicaps affecting the education of youth. School authorities should seek to coordinate services that are specifically educational with social services rendered by other public and private agencies. Schools should accept the responsibility for health and recreation if other public agencies fail to meet these needs. The above statements of administrative policy, selected from the files of superintendents and principals, obviously contain many conflicting points of view.

Thus the mere statement of principle that public education in a given community is controlled by a local board of education or school committee that obtains its powers from laws enacted by the state legislature or through regulations adopted by the state education department fails to solve basic problems of administration unless this principle is translated into regulations and policies of effective action. Boards of education may adopt regulations covering the specific health needs of

school children, but only the adaptation of these regulations into working policies and procedures can produce the desired results.

Sometimes laws and regulations precede the public support needed to ensure the adequate operation of a program. For example, introduction of physiology as a common school subject met with serious opposition. Most of the physiology textbooks of that day were prepared for college use but found their way into the public schools. Some parents regarded the subject as indelicate and quite unsuited to the appropriate instruction of girls and young women. Before the turn of the present century pressure groups succeeded in passing laws in many states commanding the public schools to provide instruction in the evil effects of alcohol and narcotics. Most schools neglected to follow the mandate. A few years later changing views turned attention away from physiology and toward the allegedly more practical aspects of health instruction. Although health instruction without the fundamental concepts of anatomy and physiology satisfied some parents who objected to their children learning about the structure and function of the human body, much of the earlier health instruction became almost as pointless as the study of arithmetic without the use of numbers!

Early conflicts between boards of education and parents with respect to health instruction and health services sometimes found their way into the courts. Decisions by the courts have not always followed a universal pattern which would establish a precedent. On the one hand court decisions have supported the principle that, since the state education department or local board of education may compel a child to attend school, it also has the right to prescribe the subjects or services applied to the child in school. On the other hand courts have decided that parents reserve the right to determine what studies shall be pursued by their children, provided the selection is reasonable and does not interfere with avowed social progress. Most decisions now hold to the view that a state education department or local board of education has the authority to require pupils to pursue subjects or receive services legally prescribed by established organizations of government.

Laws and regulations differ in the various states with respect to the health guidance and protection of school children. Most states allocate these responsibilities either specifically to local boards of education or to boards of health, although a dual responsibility is not uncommon. Some authorities recommend a separate division of school health within the local health department, especially in cities with a population of 100,000 or more. School authorities usually insist that health guidance and protection belong to the board of education, whereas public-

health workers contend with equal fervor that such services under the board of health represent the preferred type of community organization. Doubtless the program should be delegated to the department—either education or health—better qualified to conduct these services in the most efficient and economical manner. The factors of efficiency and economy suggest cooperative relationships between the board of education and the board of health in the guidance and protection of school children.

If the board of education assumes the responsibility for health services, the need for certain administrative policies becomes apparent. These relate to employment of physicians, dentists, dental hygienists, school nurses, psychiatrists, and visiting teachers; shared responsibilities for the implementation of health services among administrative officers, teachers, school nurses, school dentists, and school physicians; avoidance by school employees of giving medical advice to parents or pupils, recommending a specific physician or dentist, prescribing remedies, providing medical treatment other than first aid, and criticizing health services organized by sources outside the school; techniques used by teachers and school nurses in making home visits; cooperation with the health department in the control of communicable diseases and other services legally delegated to this department; emergency care for accidents and sudden illnesses occurring at school; examinations and inspections of school personnel; and advice to parents about children attending school when they are ill or physically unfit to profit by instruction. Some parents may object to having their children periodically examined. If the law or courts sustain parents in this position, school authorities usually have the right to exclude such children if the school physician authorizes this procedure.

Oftentimes the basic question arises, does the school have as great a responsibility for the health education of children as it does for academic or intellectual development? Three rather distinct points of view reflect the attitude of the public toward this problem.

One group contends that schools should assume an increasingly greater responsibility for the health of school children. Persons who support this position employ the following arguments: The child is an integrated personality and cannot be separated into mental, physical, and social elements. By necessity the school gradually assumes more and more of the functions formerly associated with the home and community. Since the school spends large sums of money on special classes for pupils mentally retarded, comparable amounts should be expended for physically handicapped pupils. If pupils are taught in

school the values of improved health measures, these concepts will naturally carry over into later years. Arguments against the plan follow a pattern similar to those expressed a generation or two ago in opposition to public education. If appropriate health services cannot be obtained elsewhere, the schools should provide them. In the future, health practices in schools should approximate those now employed in the best colleges and universities which frequently lead in educational matters.

The second group believes that schools now accept a greater responsibility for health education, especially health service, than state laws and regulations imply. Persons who hold to this point of view believe that schools should assume less responsibility for the health of school children. They contend that present practices usurp prerogatives rightfully belonging to the home; sow the seeds for governmentally organized state medicine; overlap functions performed by community agencies already established for similar purposes; tend to lower family responsibility in health matters; unwisely increase educational expenditures; and place the schools in the hospital business and social-service work for which education is not equipped.

A minority third group asserts that the community should establish clinics to serve school children and persons outside the school. These clinics would become an institution like public education. In this situation the schools would give health instruction and protect school children from unhealthful conditions in the school environment, but would provide no services.

The Health Specialist. The rapid development of health education during the present generation and the probable far-reaching influence of this field in the years ahead suggest the importance of a definition for the health specialist, or the person whose professional interests relate to one or more of the broad divisions of health services, healthful school living, and health and safety instruction. No profession has ever gained prominence without specialized personnel to maintain and promote the objectives of the organization. Further the belief in specialization enjoys general acceptance in education with expertness regarded as a virtue in the various subject areas of teaching, as well as in administration, guidance, and other functions associated with the school.

Perhaps the program's breadth of scope, its recent origin, or other factors account for the few school-health specialists recognized as such by their sparse contemporaries. On the basis of preparation, a narrow view confines the term "health specialist" to persons trained in medical,

dental, and nursing schools. A broad functional view would accept as health specialists, in addition to the above, public-health workers, health teachers, physical educators, teachers of biological science, teachers of home economics, and instructors of kindred subjects.

For purposes of this text, the health specialist is defined as *a person whose major function in the school relates to one or more aspects of health education and who effectively coordinates his work with the entire program of education and of public health.* The combined efforts of such specialists, given adequate preparation and opportunity, would soon establish a valid foundation for health education in the schools and colleges of America.

Summary

The student of health education needs to acquire an awareness of health problems as they exist, evaluate accurately the forces operating to support or restrict the current efforts to meet these issues, and accept with intelligence the responsibilities imposed upon him as a good citizen or professional person in helping to solve the health problems that lie ahead.

During the first decade of the present century nearly all of the separate states either established initial legislation on public health or revised existing statutes.

Definitions of health vary according to a person's philosophic and technical backgrounds. A functional view defines health as that quality of life which enables the individual to live most and serve best. In the final analysis one must accept the definition of health that appears most satisfactory to him and, having accepted a definition, put forth his best efforts to secure the blessings of Hygeia for himself and for others.

Health education represents the sum of all experiences in school and elsewhere that favorably influence habits, attitudes, and knowledge relating to individual, community, and racial health. Health education includes in its scope the three major divisions of (1) healthful school living, (2) health services, and (3) health and safety instruction. A complete health-education program gives due recognition to the activities embodied in all three of these classifications since each one of them possesses unique elements wherein the child learns to react favorably to his immediate environment.

As the complexities of civilization increase, government assumes greater responsibilities in regulating the lives of a people. Voluntary agencies and private-enterprise groups often point the way for governmental organizations to follow in the conduct of public affairs.

Hand in hand with the development of government, the need arises for expanding public education. With the possible exception of recreation, no other school development presents so many problems as health education, largely because several official and voluntary agencies in the community have a vested interest in these problems.

The schools have an excellent opportunity to engender rules of healthful living among students since each youth, from early childhood through adolescence, spends several hours per day for approximately one-half the days of the year under the supervision of school authorities. Such education refers to assistance given pupils in solving their own health problems, the ideals of personal and community hygiene formed through effective instruction, and the services provided to ensure a healthful school environment.

The legal aspects of health education relate to laws enacted by the legislature, regulations established by official organizations of government, decisions rendered by the various courts, and attorneys' general opinions. The need for recodifying health laws in the various states and reconciling laws, regulations, and other mandates represents an acute problem. Most state legislatures give to the state education department and to local school boards broad powers in conducting the affairs of public education. Boards of education may adopt regulations covering the specific health needs of children, but only the adaptation of these regulations into working policies and procedures can produce the desired results.

A health specialist may be defined as a person whose major function in the school relates to one or more aspects of health education, and who effectively coordinates his work with the entire program of education and of public health.

Questions and Problems for Discussion

1. What factors and forces may have been responsible for the rapid development of public health and health education during the present century?

2. Describe the Joint Committee on Health Problems in Education with reference to its membership, function, and opportunity. What new areas, in terms of public need, might be explored by this Committee?

3. What definition of health appears most satisfactory to you? Why should a person formulate his own definition of health? What is the responsibility of a person who has formed a definition of health which satisfies him?

4. What implications has Wood's definition of health education for attacking international problems? What factors and forces both support

and oppose the use of health problems in creating improved international relationships?

5. As government assumes greater responsibilities in regulating the lives of people in this country, how may this principle affect the future of (*a*) public health, or (*b*) health education in schools and colleges?

6. In what ways do health education and education for leisure present greater administrative problems for the schools than most other programs with which the schools are concerned?

7. Explain the essential differences between (*a*) laws, (*b*) regulations, (*c*) court decisions, and (*d*) attorneys' general opinions.

8. If you were in charge of health education in a given school system and a parent refused to permit the examination of his child by a legally authorized school physician, what steps would you take to resolve the problem? What difficulties might arise?

9. How do you account for the existing confusion relating to the powers and responsibilities of boards of education in health matters? What should be done?

10. How do you define a health specialist? Is it true that no profession has ever gained prominence without specialized personnel to maintain and promote the objectives of the organization? Does this include some form of licensing or certification of personnel?

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CHAPTER 2

HEALTH PROBLEMS IN AMERICAN DEMOCRACY

Problems Arise from Various Sources. Without doubt the health problems confronting a democratic society closely resemble those in countries with different forms of government since biology respects no particular form of governmental organization. Differences in standards of living among countries, however, and the various factors responsible for these differences lead to widely diversified definitions of health problems and efforts put forth to solve them. Even within a given form of government the health problems change from generation to generation as a result of scientific discovery, modification of environmental factors, and the force of public opinion.

Sometimes an apparent solution appears, only to have the problem again become acute some years later. Yellow fever, as a scourge that annually affected thousands of people, became practically unknown in America with the discovery and use of adequate protective measures, yet the rapid advance of international air travel might result in the reestablishment of yellow fever as a public-health problem of considerable magnitude. In 1947 the first death from smallpox in 45 years occurred in one of the largest American cities. The almost universal technique of vaccination had practically eliminated the fear of this disease. So rare had smallpox become that at first few practicing physicians recognized the symptoms. In the program of vaccination that followed, citizens stampeded the hospitals and health stations demanding protective treatment, whereas a generation or two ago the people opposed laws relating to vaccination. Today such problems as the treatment of heart disease, rheumatic fever, and cancer, the development of some forms of organized medicine, and other matters that had received minor emphasis until recent years challenge our attention.

The complexity of factors responsible for these changes defies clear differentiation. Probably the true answer lies in the peculiar but close interrelationship of forces associated with improved medical science,

higher standards of living, increased attention to public health, and enriched educational opportunities.

The problems selected for discussion below make no claim to completeness; many others worthy of consideration will occur to the critical reader. These problems, however, serve to illustrate trends in health education and perhaps to indicate the direction of future emphases.

Conservation of National Vitality. Oftentimes interest in the conservation of natural resources exceeds concern over the conservation of health, the nation's greatest resource in terms of happiness and success. For many years the steps taken to preserve water power, reforest timberlands, and protect mines against wasteful operation have resulted in the systematic organization of forces to prevent exploitation. The average person whose major occupation deals with the care and breeding of domestic animals probably has more scientific knowledge about his work than parents and teachers have with respect to the growth and development of children.

Improvement in scientific knowledge relating to health provides a wealth of valuable information for use in increasing the nation's vitality. Much of this information remains unused. Despite readily available data on balanced diets and the fact that the United States represents one of the few countries with an abundance of food, nutritionists contend that at least 70 per cent of the population remains improperly nourished. Data obtained from state boards of health, the United States Public Health Service, and the National Safety Council indicate the possibility of preventing approximately 40 per cent of the annual deaths if existing knowledge were applied. The economic loss from preventable illnesses and accidents remains unknown. Also uncomputable but no less significant are the losses of a purely personal nature suffered through the breaking up of long-established homes, separation of families, and the death of loved ones; these losses register in psychological effect upon the mind and spirit of those left behind or those compelled to accept new and strange responsibilities.

Perhaps one of the greatest achievements of scientific investigation relates to individual differences and to all that this subject implies. Education has begun to give due recognition to such differences in matters of academic development, although too often health teachers and guidance counselors fail to make adequate provisions for individual variations among children.

Generally considered, individual differences relate to such factors as age, sex, heredity, and environment. The stalwart youth aged seventeen

and the man of seventy both may be free from remediable defects, yet their characteristic manifestations of health differ widely in terms of biological and cultural interests and needs. The average man past his prime who foolishly endeavors to perform muscular feats in sports or on apparatus that challenged him as a youth exemplifies neither sound judgment nor health knowledge but rather demonstrates a sort of exhibitionism usually correctly labeled by his friends and associates! The adolescent girl differs from her twin brother in terms of strength and endurance, although their basic biological and psychological interests and urges are about the same. Both may equally avoid communicable diseases and reflect sound health, yet the male usually needs larger quantities of wholesome food to maintain his state of well-being. For years science has recognized hereditary differences in body build, strength, endurance, susceptibility to infectious diseases, and other physical qualities, although environmental factors after a few generations tend to equalize these variations.

No conclusive evidence exists supporting the point of view that soundness of body protects persons against diphtheria, influenza, malaria, typhoid fever, and other common communicable diseases, yet one's state of health may help to determine the rate and completeness of recovery from such infections.

Scientific discovery concerning the diagnosis, prevention, alleviation, and cure of many diseases represents a glorious chapter in the development of public health. Established knowledge about physical and psychological well-being provides a wealth of valuable materials for education.

While individuals have important responsibilities in protecting their own health, real improvement in increasing the nation's vitality depends also upon group action brought about by governmental and voluntary agencies. Only through concerted action of individuals and groups may fitness and vitality be raised to the level of excellence they deserve as national resources of paramount importance.

Population Shifts and Public-health Education. Obviously both gradual and sudden shifts in population create health problems. Early immigration brought to this country stalwart Europeans able to withstand the hardships of an unsettled land. Development of an industrialized society resulted in the immigration of groups less well equipped by nature to withstand physical hardships and, in fact, many of these people brought with them a heritage of disease susceptibility and questionable sanitary practices.

The interchange of old and new stock in rural and industrial communities led to higher morbidity and mortality rates. Without doubt the industrial revolution contributed to the rise of official public-health organizations designed to protect human welfare. The gradual shift in population from rural districts to more congested areas aroused public opinion to demand improved public-health measures in urban communities with the result that present health standards in cities often surpass those found on farms and in small villages. Great strides have been made to protect workers against disease and accident, although the health aspects of housing continue as perplexing problems. Pure food and adequate water supply usually present issues of considerable magnitude when pronounced shifts in population occur or when people congregate into one central area.

Health problems occasioned by sudden shifts in population always challenge the attention of responsible authorities. The great movement of westward expansion, the migration of families from dust bowls to California, and the concentration of war workers in industrial cities give evidence of this truism. Not only do persons take with them the health practices to which they are accustomed, but congestion requires a larger number of strict regulations controlling sanitation and other measures connected with healthful living.

Rapid means of transportation deserves mention in a discussion of this kind. Steamships and railroad trains now travel faster than ever before and, despite prodigious efforts by health officials, a disease carrier may transmit ill health hundreds or thousands of miles. Huge passenger planes could circle the globe in a few short days and conceivably spread disease among several nations of the world. Of course strict health regulations are enforced, but a disease in the incipient stage might escape recognition at the port of embarkation only to become transmissible a few hours later in another country.

Perhaps the family automobile represents the greatest menace to health in terms of shifting population. Few public-health ordinances apply to persons who travel from one place to another by private car except those established in various states or local communities. Unless an epidemic threatens, such travelers need not obtain health certificates prior to embarking on a journey of weeks' or even months' duration. En route the family may be exposed to several diseases and to food and water of questionable purity.

Official public-health organizations, established and maintained to protect a reasonably static population, experience difficulty in coping with problems that arise among migrating groups. Public-health educa-

tion, together with instruction in schools and colleges, must help to solve this problem.

Revelations of Vital Statistics. Mortality and morbidity rates belong to that category of data known as *vital statistics*. Vital statistics include, besides mortality and morbidity, the record of births during a given year. Mortality statistics refer to the number of persons who die each year and the causes of such deaths, both in relation to population.[1] Morbidity statistics allude to the number of persons who become ill each year and the causes of illness, again in relation to population.

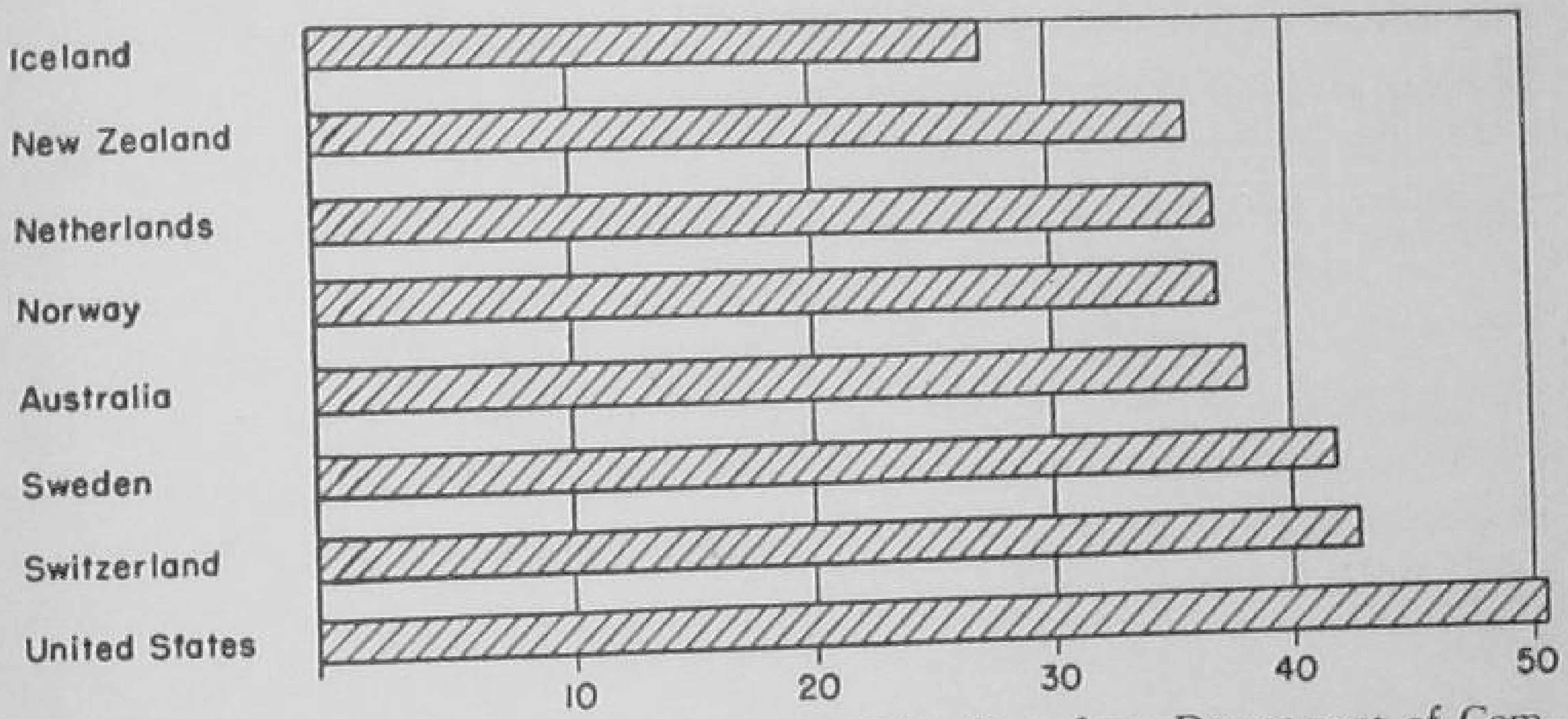

FIG. 1. Crude infant mortality rate 1930 to 1944. Data from Department of Commerce, Bureau of the Census tables, rate per 1,000 live births among children under one year of age.

Vital statistics provide one of the chief sources of health-education materials. These statistics are collected and documented by local, state, and Federal health authorities. Public-health authorities study these data and formulate means to prevent, control, and eradicate unwholesome conditions found. Education functions by dispensing such information through appropriate channels; the information is both accurate and timely.

Crude data, or actual figures on mortality and morbidity, are easily obtained. Correct interpretation demands knowledge and understanding with respect to the relationships involved. For example, the inci-

[1] The term usually applied, "crude death rates," refers to the ratio of annual deaths to the mean population. Death rates for all causes usually express the number of deaths per 1,000 population; for a specific cause of death the ratio refers to the ratio per 100,000 population; and for infant mortality, the number of deaths under one year of age per 1,000 live babies at birth.

dence of tuberculosis during one decade as compared with another requires more than a mere statement of the number of cases recorded at each interval. The experienced public-health worker takes into account such factors as changes in population rates, age, sex, and opportunities to contract the disease during the respective years.

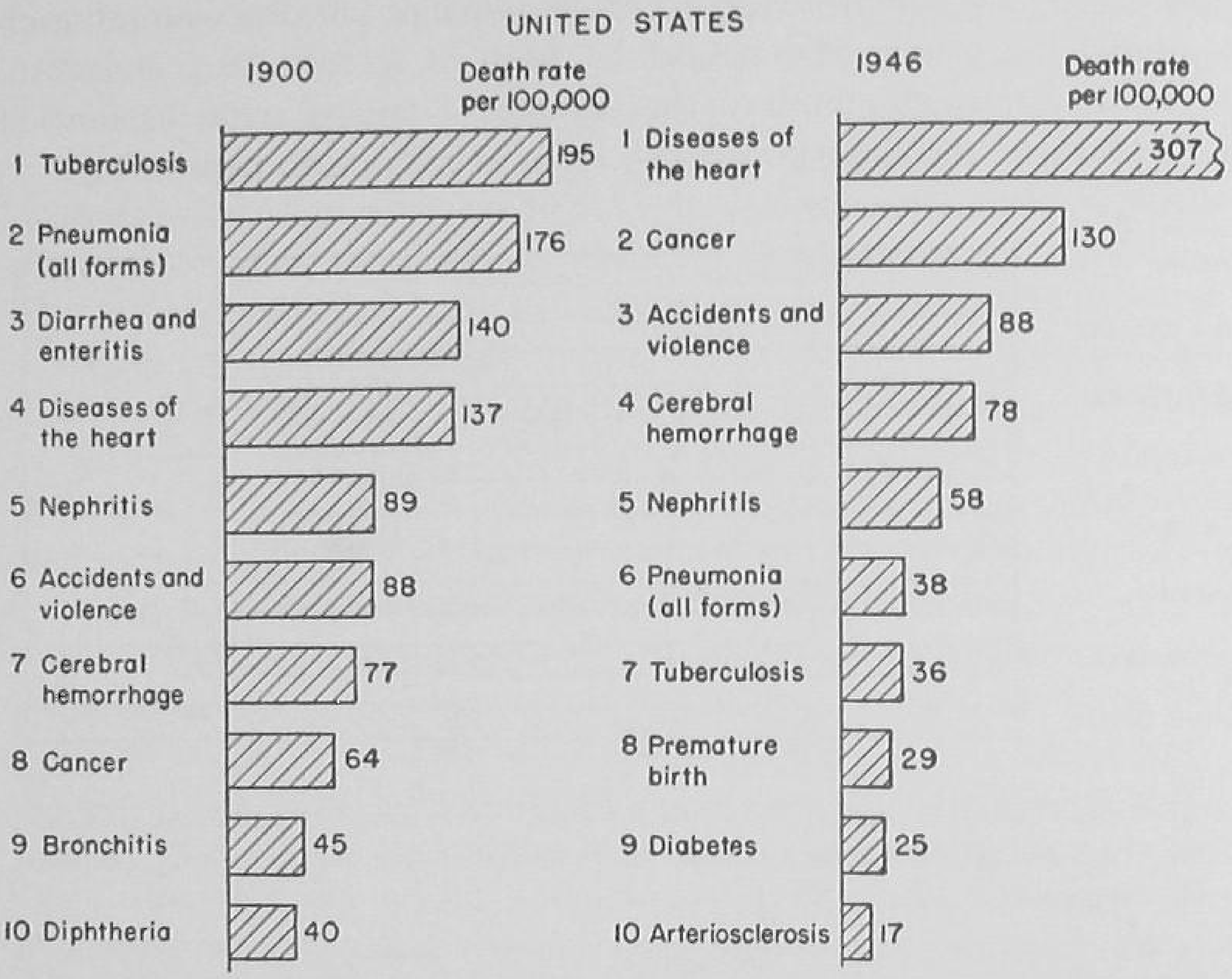

FIG. 2. Comparative death rates, principal causes. Based upon data, *Statistical Bulletin*, Metropolitan Life Insurance Company, Vol. 29, No. 4, April, 1948.

The proper use of mortality and morbidity statistics helps to measure the nation's health. Rapid advances in medical science give high reliability to mortality rates; morbidity data do not as yet enjoy this standard of excellence. On the basis of official figures, the nation's health is shown to have steadily improved, although greater advancement could easily be obtained if persons followed the commonly known and approved health practices.

Decrease in mortality rates means overcoming conditions responsible for destroying life before it reaches its biological limits. Recent mortality reports show the leading causes of death for all ages and in order of importance to be heart disease, cancer, apoplexy, nephritis, accidents, pneumonia, and tuberculosis. Near the beginning of the present century

tuberculosis headed the list, but improved prevention and control together with reduction in infant mortality have changed the picture. The increasing life span accounts for more deaths from the degenerative diseases with pointed attention focused on this problem.

The majority of morbidity data involve colds, bronchitis, influenza, tonsillitis, and other acute infections of the upper respiratory organs. More effective public-health measures and improved education could do much to reduce these figures.

Although records of death and illnesses present a splendid index of community health, physical condition must also be regarded as an essential element. Most persons live far below their normal health capacity. Aside from heredity, the following factors deserve attention: periodic health examinations, correction of remediable defects, nutrition, relaxation, exercise, and satisfying work. Surely education has an important role in helping youth and adults to live happy, useful lives.

Increase in Life Expectancy Creates New Problems. This problem concerns health education in at least two respects. On the one hand, man has striven to lengthen the life span since the beginning of civilization, especially by utilizing science in recent years. On the other hand, an increasingly higher percentage of the population in the upper age brackets creates new problems of disease, safety, care of the infirm, and opportunities for youth in gainful employment. All of these factors contain unique implications for health education.

Between the sixteenth and twentieth centuries the average life span increased roughly from twenty-five to forty-nine years. At present the average length of life approximates sixty-four years for white males and sixty-nine years for white females.

Quite obviously an increase in life expectancy follows a decrease in the diseases and other conditions responsible for destroying life before it reaches its biological limits. Quite obviously, too, the increase in average length of life may be largely attributed to decrease in infant and child mortality. Between 1900 and 1940 the death rate for people of all ages in this country improved some 38 per cent, although the rate among children under ten years of age improved 73 per cent. Data for adults show an increasingly less favorable picture, although at age forty-five the expectation of life increased by more than five years between 1911-1912 and 1945; and even at age sixty-five corresponding gains amounted to between two and three years.[2]

[2] *Statistical Bull.*, Vol. 28, No. 4, p. 7, April, 1947. New York: Metropolitan Life Insurance Company.

Among the many factors responsible for increase in life expectancy, the principal elements relate to the efforts of modern science in controlling infant and childhood diseases and to the general improvement of techniques associated with child care. These factors also may be partially responsible for the apparent increase in the degenerative diseases which affect persons in middle or later life.

Climate and industrialization relate to longevity with the typical agricultural states showing a higher life span than the industrial regions.

Probably cultural and national inheritances influence length of life, although after a few generations this advantage seems to give way to environmental considerations.

Improvement in the kind and amount of organized public health in both rural and urban communities, together with achievement of other agencies, deserves honorable mention. As one of the most rapidly expanding and forward-looking institutions of government, organized public health annually saves thousands of lives which formerly might have succumbed to disease. Numerous voluntary health organizations render efficient service by pointing the way to better health and by providing skilled leadership. Private medical practice, nursing and hospital services, and expert dental care assume a most important role in increasing life expectancy. Education in health and safety helps people to live longer, happier, and more serviceable lives.

Some persons believe that the health safeguards of modern society may lead eventually to a physically inferior adult population in this country. The general plan of nature perpetuates the race by destroying the weak and permitting the strong to survive, whereas public health aims to prolong human life. Few would advocate relinquishing health and safety standards in the questionable hope that nature might thus improve the nation's physical strength and vitality. Instead better use of medical services and education could lessen the effects of degenerative diseases, reduce accidents, and lead to improved nutrition for the American people.

The trend toward a higher percentage of population in the middle and upper age brackets poses a series of problems. A generation ago it was believed that the productive years of a man's life curved downward after forty. Recent studies indicate that the average person at the age of forty, by proper attention to his health, may enjoy many additional years of gainful occupation. The increasing number of older men and women who continue with their work, and the mechanization of industry whereby machines substitute for human hands, result in fewer jobs for youth and the need for socioeconomic reorganization.

Education must provide more varied opportunities for children and young adults and provide them over a longer period. Social planning must ensure adequate old-age pensions for persons deserving such aid. Public health must direct greater attention to the diseases and unhealthful conditions and also to the emotional disturbances of middle life.

Fig. 3. The plastic lung represents a development of medical science.

Wholesome recreation with greatly increased opportunties must be regarded as one of life's necessities next to food, shelter, and clothing. The potential role of education in molding public opinion toward finding solutions to various problems associated with longevity suggests the need for wise planning in schools and colleges.

Increasing birth rates and decreasing death rates complicate the problems of education and social welfare. Something like 12,500,000 persons have been added to our population since the census of 1940. This increase exceeds by about 40 per cent the population growth during

the decade of 1930 to 1940. On the basis of these data the population of the United States may reach 150,000,000 by 1950.[3]

Physical Fitness and Health Care. Physical fitness becomes a problem largely because of different opinions, even among experts, concerning the amount and type of exercise most beneficial to health. The war years helped to emphasis this problem.

Prior to the war the emphasis in physical education gradually changed during a generation, moving from strict response-to-command and "graded" formal calisthenics and gymnastics toward games and sports, the dance, and recreational activities. Interest and skill in events rich in carry-over values gradually but consistently found their way into the objectives of physical education, with physical fitness per se relegated to a less important role. Most physical educators prepared in modern schools and colleges of education approved of this shift in emphasis, but the men and women trained under the influence of the Turnverein (a goodly number, with firm professional convictions) viewed the change as removing from physical education much of the vitality it had previously enjoyed, and as distorting its original purpose.

The military services employed physical exercises of a rugged nature to toughen and condition men for combat duty. The revival of calisthenics and gymnastics as used in these programs, together with the adoption of other formalized techniques to develop quickly strength and endurance among fighting men, gladdened the hearts of those physical educators who had viewed with alarm the trend toward games and sports in schools and colleges. Those who believed in an informal program of physical education held to their basic beliefs and reconciled their position by the often repeated principle that training for military service is one thing—education for democratic living is quite another.

Most students of the subject agree on two principles: (1) all persons require a certain degree of fitness to live happy and useful lives, and (2) exercise has positive health values, especially for youth. The chief points of controversy relate to a determination of the amount of fitness needed as a base for all persons and of the health values of relatively vigorous exercise for adults engaged in sedentary occupations. Current physiologies of exercise fail to provide convincing proof on these points.

In terms of physical education certain concepts relating to exercise may prove helpful. Exercise helps to develop endurance, coordination,

[3] *Ibid.*, No. 12, p. 5.

and strength. It facilitates growth of muscular tissues and aids in the functioning of vital organs. Exercise increases the concentration of both the red corpuscles and leucocytes, thus favoring the nourishment and defense mechanisms of the body. Posture may be improved through exercise, and good posture has both physical and psychological implications. Sometimes physical education overdevelops certain muscle groups and neglects others; or it may lead to gross fatigue and excessive strain, both detrimental to health. The social values of joyous and vigorous activity promote emotional discipline and wholesome competitive relationships.

The war has increased the complexities of evaluating physical fitness in relation to health. Strong advocates of vigorous exercise point to the unfitness of men entering military service and recommend universal attention to the development of strength and vigor among the total population. Other exponents of equal professional competence continue to emphasis the need for education in developing a wide variety of recreational interests and skills and to contend that fitness is largely specific, *i.e.*, that the football player needs one kind of fitness, the swimmer another, and the sedentary worker still another.

Quite obviously the contribution of physical fitness to health depends upon one's definition of the two terms. Many heated arguments would change to pleasant and enlightening conversations if the opponents could agree on definitions of fitness and health. Does fitness mean the ability to engage in the normal activities of life without undue emotional and physical fatigue, the ability to perform a specified number of foot-pounds of work in a given time, the degree to which a person may demonstrate his strength and endurance within the limits of his capacity, or does it mean something else? Does health mean normal functioning of the body organs and systems (and what is meant by "normal"?), or does health contain social and emotional implications deserving quite as much consideration as physical manifestations? Further discussion of these issues appears in later chapters.

Selective Service and Public Opinion. The appalling number of young men found unfit for military service stimulated a number of public-minded citizens to criticize the schools and official health organizations for the deplorable conditions found, condemn the human waste resulting from lowered strength and vitality, and proclaim that appropriate action must be taken to reduce the number of defects among the general population. Nearly one-half of the first million men examined for military service were found unfit, and many of those selected possessed

physical qualifications only for limited service. At the time one nationally prominent person remarked, ". . . this is indicative of . . . [the] physical condition of this country's youth, of which we . . . should be thoroughly ashamed. . . ."

TABLE 1. PHYSICAL FITNESS OF 17,000,000 SELECTEES *

Accepted	10,700,000
Rejected	6,300,000
Accepted later	1,500,000
Rejected later	1,500,000

* Data from Chief Medical Service Division, Selective Service System, 1944.

Comparisons between draft rejections in 1917-1918 and selective service data of 1942-1943 show that approximately the same percentage of men failed to qualify for active duty at each period. These comparisons are often cited by uninformed persons to demonstrate that health education in schools and colleges, public-health programs by official and voluntary agencies, and private medical and dental practice—all have failed!

Informed persons insist, and rightly, that the medical standards used in 1942-1943 differed widely from those employed in 1917-1918. Experiences of the First World War and development of medical science during the intervening years led to the adoption of much higher standards in 1942-1943. In fact, the standards were so different that comparable data have little meaning, except to show that considerable improvement in general health status must have occurred between the two wars.

The explanation given above does not mean that we may remain satisfied with the current progress of health education and public health nor with medical and dental care as it now exists. The health status of American citizens needs to be improved. The proper use of selective service data in education, moreover, may arouse public opinion to demand better health for both children and adults.[4]

But the problem of selective service deserves careful attention. In the hands of untrained persons, these data may lead to the demand by pressure groups for compulsory health examinations for everyone and then to compulsory correction of defects found. As a nation we may not object too strenuously to compulsory health examinations, since they are already required in most schools, as a condition of employment in many occupations, and for persons seeking life insurance. Thus

[4] G. St. J. Perrott, "Selective Service Rejection Statistics and Some of Their Implications," *American Journal of Public Health*, Vol. 36, p. 342, April, 1946.

far we tend to balk at compulsory correction of remediable defects, and perhaps rightly so. Yet many health educators agree that required school-health examination, without the necessary correction of defects, represents largely a waste of time and money.

Selective service enabled millions of men and women to have free and almost compulsory health care while serving in the armed forces. The effects of these experiences on former military personnel, on the medical officers and enlisted men who attended them, and on the general public remain somewhat obscure. May we look forward to an increasing liberalization of group medical care and the attendant controversies associated therewith as future health problems in American democracy?

Education and Tuberculosis Control. To children attending public schools today the term "white plague" sounds both mysterious and ancient. But to their parents or grandparents, "white plague" means consumption or tuberculosis, a dreadful disease which brings terror both to the patient and to his family.

Nowhere in the annals of history have organized public health, voluntary agencies, and education worked more closely together than in the control of tuberculosis. Sanitariums give treatment to persons suffering from the disease. Preventive measures are diligently applied. Science has produced remarkable tests of susceptibility. Education has kept pace by awakening the public consciousness and by keeping the public informed in matters of prevention, protection, and treatment.

A generation ago many physicians believed that nearly every person twenty years of age had been infected with tuberculosis. Modern examination procedures prove the fallacy of this belief in terms of students now attending public schools and colleges.

Established means of curtailing tuberculosis quickly followed discovery of the specific germ responsible for the disease, the tubercle bacillus. One strain of the tubercle bacillus may pass from a person suffering from the malady to another person closely associated with the stricken individual. Another strain, known as the bovine type, may be transmitted by drinking raw milk from infected herds. State laws requiring milk pasteurization and eradication of tuberculous cattle have practically eliminated bovine tuberculosis. In fact, control of the disease among animals far surpasses similar control among human beings.

Science has devised two methods of determining tuberculosis infection. One method, the Mantoux or Mendel's test, consists of injecting a small and diluted amount of tuberculin into the superficial layers of

the skin. If the surrounding area becomes red, the physician may conclude that the person has been infected with tubercle bacilli at one time or another. This test fails to distinguish between an active and a healed infection. The second method involves an X ray of the chest with careful analysis of the findings by a competent physician. Even though the Mantoux test shows a positive reaction, the X ray may indicate no immediate danger. On the other hand, the X ray represents a more accurate technique for determining the existence of tuberculosis; oftentimes this examination discloses evidence of infection at least two years before other symptoms appear. Since early diagnosis and treatment largely determine the final outcome of the disease, many schools use the Mantoux test and administer X-ray examinations to all students at periodic intervals.

Tuberculosis can be prevented. Although some persons appear to believe that the war against tuberculosis has been won, such is not the case. In 1944 the United States Bureau of Census estimated the death rate from tuberculosis at 41.3 per 100,000 population, excluding the armed forces overseas. Only the combined and effective efforts of organized public health, voluntary health agencies, and education may lead to the elimination of this disease as a persistent health problem in American society.

Increasing Death Rates from Heart Disease. Increasing death rates from some form of circulatory disease confront the reader of current newspapers and magazines, the student of vital statistics, and the practicing physician. So widespread have these data become, so alarming are the stories designed to acquaint the public with actual conditions, that many persons of middle age grimly contemplate the fateful day when some cardiac dysfunction suddenly will terminate their worried existence.

Sound education has an important role to play in overcoming the problem of heart disease. The properly educated person regards his health as a valuable asset to happiness and service and protects it. He recognizes the values of public-health measures and school-health programs and supports these agencies for the benefit of his family and of the community. With reference to heart disease, the educated person knows the essential facts about the malady and governs his life accordingly.

The two most common circulatory disorders involve the degenerative diseases and infections of the heart muscle and valves. Degenera-

tive conditions of the arteries frequently occur after forty years of age. Fatty material collects in the inner walls of the arteries, reducing in size the normal channel through which the blood flows. Nature increases the blood pressure to meet body needs, thus further extending the arterial walls and placing a greater burden on the heart muscle. Prevention of degenerative heart diseases relates mainly to avoidance of nervous strain and worry, proper nutrition with avoidance of overeating, wholesome physical activity without undue fatigue, and periodic health examinations by a competent physician.

Infections of the heart muscle and valves resulting from rheumatic fever contracted in childhood often become apparent later in life. Some authorities hold rheumatic fever responsible for approximately 25 per cent of the deaths caused by circulatory malfunction up to the age of fifty. Rheumatic fever (or rheumatic heart) is five times as common as such children's diseases as whooping cough, scarlet fever, measles, and poliomyelitis.

Rheumatic fever in childhood frequently eludes early diagnosis. At about twenty-five years of age the medical examiner may find a heart condition that he attributes to an earlier rheumatic infection. School nurses and teachers may render valuable assistance to family physicians or medical advisers in the control of rheumatic fever by reporting children who show evidences of becoming easily fatigued, a family history of the disease, frequent sore throat, a history of scarlet fever, a history of frequent colds, frequent and unexplained nosebleed, aches in joints and muscles, unexplained nervousness, malnutrition, and awkwardness.[5] In brief, the teacher or nurse may assist in controlling rheumatic fever by reporting to the medical examiner the pupil's chief complaint—or "cc." in the vernacular of the health worker.

Actual damage to the heart, from whatever cause, seldom can be repaired. Appropriate medical supervision, however, will determine the functional condition of the heart and circulatory system and suggest a plan whereby the afflicted person may lead a normal and useful life within the limits imposed by the specific condition. In this plan sound health education is of paramount importance.

Medical Research and Cancer Control. Fortunately the vendors of patent medicines in small towns had disposed of their wagons and ceased their dubious efforts before cancer became recognized as one of the

[5] Herbert Yahraes, "Rheumatic Fever Childhood's Greatest Enemy," *Public Affairs Pamphlet* 126. New York: American Council on Rheumatic Fever of the American Heart Association, Inc., 1947.

chief causes of death among persons beyond middle age. The great fear of this serious malady together with the lack of health education might have provided a rich field for the smooth charlatan with his brown bottle and glowing testimonial.

The problem of cancer occupies a prominent place in medical research and must receive greater attention in health education. Some authorities maintain that approximately one person out of every six or seven above the age of forty may die because of cancer. Surely the death rate from this cause has increased rapidly in recent years, owing either to more actual cases or to improved diagnosis or both.

Regarded not as a germ disease, cancer represents a condition in which certain cells of the body reproduce rapidly without conforming to the usual pattern of biology. Its actual cause remains unknown although diligent research provides information relative to prevention and treatment. Prevalence of cancer among family groups indicates inherited susceptibility as a contributing factor although no evidence shows actual inheritance of the disease.

Cancer may affect the skin or internal organs. Irritation or infection may facilitate progress of the disease. Sores that fail to respond readily to normal treatment should receive special medical attention. Moles and projecting warts, located where irritation may develop, should be removed.

Successful control of cancer depends upon prevention, early diagnosis, and immediate treatment.[6] Prevention consists of avoiding irritations and coal-tar products believed to aid in producing the disease. Early diagnosis means consulting a qualified physician for periodic health examinations and frankly reporting to him all conditions associated with the affliction. Immediate treatment usually involves surgery, X ray, radium, or cautery. No medicine, diet, or serum thus far discovered will cure cancer; ointments, liniments, and plasters produce no healing effects. The present approach to the cancer problem through medical research gives evidence of hope, even though the actual cause remains in doubt. Adult education concerning the disease has a long way to go, even in acquainting the public with information currently available.

New Attacks on Pneumonia. Some years ago physical-education teachers gave special attention to posture. Later many of these teachers accepted the point of view that no single alignment of body segments

[6] "Facing the Facts about Cancer," *Pub.* 38. New York: The National Cancer Institute and The National Cancer Society, 1947.

accurately describes posture, hence the term "postures" became popular. In like manner health service in schools gave way to health services. Within the present generation pneumonia may become "pneumonias," because it is not a single disease but a general condition caused by various germs which act in different fashion at different times.

Pneumonia represents an inflammatory condition of the lungs wherein one or both of these organs become partially filled with fluids. During infancy or old age, pneumonia often causes death; among other persons the disease is serious but rarely fatal. One type of the disease (streptococcus pneumonia) often follows cases of influenza, measles, or whooping cough.

In recent years sulfonamides and penicillin have proved effective in the treatment of certain types of pneumonia. Early medical attention and expert nursing care greatly reduce the dangers from the malady. Much could be done in health education to reduce the morbidity and mortality rates of pneumonia by teaching persons how to protect their general health, what to do when danger threatens, and proper home care of the sick.

Infantile Paralysis or Poliomyelitis. This dreadful disease receives its name because it usually attacks children although adults may suffer its effects—the broader term is poliomyelitis. The total number of cases reported in the United States in 1915 amounted to 1,639; by 1944 this number had increased to 19,029. The proportion of cases resulting in death, however, declined from about 40 per cent (661 cases) in 1915 to about 7 per cent (1,361 cases) in 1944.[7]

The microorganism that causes infantile paralysis injures nerve cells in the anterior section of the spinal cord, preventing motor impulses from reaching various parts of the body. About one-half the cases obtain complete recovery by appropriate medical care; the other one-half suffer either partial or complete and permanent paralysis.

Huge sums of money are spent on poliomyelitis through organized medical practice and through the efforts of the National Foundation for Infantile Paralysis, Inc. The great educational results associated with the annual "march of dimes" campaign suggest the value of this type of enterprise in molding public opinion toward an awareness of conditions affecting normal health. The health-education program in

[7] "Facts and Figures about Infantile Paralysis," *Pub.* 59, pp. 8-9. New York: National Foundation for Infantile Paralysis, Inc., 1946.

schools for children and adults has a serious responsibility in dispensing accurate information concerning infantile paralysis.

Accidents and Safety Education. In 1946 accidents cost this country 100,000 lives, together with 10,400,000 injured, and the staggering financial sum of around $5,600,000,000. During the same period the loss from fire amounted to 25,000,000 man-days of work (about one-fourth the time lost in strikes and labor disputes), 10,000 lives, and about $560,000,000 in property. The wood thus destroyed would have built 2,000,000 five-room houses.[8]

The shocking factor in these losses? Most of them resulted from carelessness!

In recent years, except possibly during the Second World War, educational campaigns have given increased attention to safety. As with most new subjects, school administrators have followed one of three plans in introducing safety into the curriculum: (1) establishing the program as a separate subject; (2) associating it with an existing subject or program; or (3) expecting all teachers to give whatever safety instruction they might find appropriate—sometimes called the "salt-shaker" method. A growing trend favors combining safety with health instruction, and many of the newer courses of study in this field use the title "health and safety instruction."

The National Safety Council, Inc., of Chicago publishes significant data and instructional materials used widely by teachers and safety directors. From this source come most of the reliable facts relating to accident rates and safety hazards. One learns, for example, that the two main trends during the past 40 years have been upward for motor fatalities and downward for all other types.[9] Most automobile accidents result from driver negligence; only a small number occur because of faulty car mechanism or highway conditions. Driver-education courses in secondary schools may help to reduce the appalling number of automobile accidents. Home accidents continue to lead the list with falls most common, followed by burns, and with poisonings a poor third. Marked reduction in industrial or occupational accidents may be attributed to education, safety devices installed on moving machinery, and legislation on industrial compensation. Children between the ages of five and fourteen show a marked decrease in accidental injuries, which may provide evidence of effective safety education among the

[8] "Accident Facts," *Ann. Bull.*, Chicago: National Safety Council, Inc., 1947.
[9] *Ibid.*

public-school-age group inasmuch as all other age groups suffer an increasing number of accidents as the years pass.

The problem of accidents and safety clearly deserves immediate and concerted attention by the American people. Most authorities agree that education represents the focal point for attacking this problem. Few other subjects present such a wealth of object-teaching opportunities in the home, school, and community. The fact appears rather ironical that while someone is making a 10-minute speech on safety, two persons in the United States will die an accidental death and 200 others will suffer injuries that might have been prevented.

Reducing the Number of Health Fads. Probably most persons have followed one or more health fads that are just about as reasonable in terms of scientific fact as the belief of the baseball player that his batting average depends upon a wad of gum carefully applied to the button of his cap. Health fads thrive on ignorance—ignorance concerning the principles of health and disease.

Fads and cults flourish because of the inherent desire of man to improve or to maintain health. Lacking scientific knowledge of normal growth and development and the facts of body structure and function, he becomes a ready customer for advertised ways of warding off an impending health evil or of recovering from a real or imaginary affliction. The radio, daily newspapers, and current magazines may carry appealing advertisements which arouse his curiosity or fear. Well-meaning but uninformed friends may influence him to seek guidance or aid from a source disapproved by modern science. Some cults promise a cure if the patient takes an adequate number of treatments. Oftentimes a person whose emotions are badly adjusted, but who has nothing organically wrong with him, goes from one physician to another and finally resorts to a popular remedy represented to him as a positive cure.

The number of persons believing in health fads, cults, and superstitions demonstrates the inadequacy of education in these matters. The great fallacy lies in the essence of scientific truth associated with many of these alleged health aids, but their application too often does not fit the case. Does the average person gamble with his health rather than face reality? While massage and manipulation possess beneficial elements in treatment, does this mean that states should license men and women trained only in these arts to prescribe for the germ diseases? How long shall the public remain satisfied with the 6 to 9 months'

preparation of a group of healing practitioners whose process is elaborately described as a philosophy, science, and art of things natural and a system of adjusting subluxated vertebrae of the spinal column for the elimination of disease and the restoration of health? Although mental attitudes and emotional states may vitally affect health, should not faith healers be compelled to recognize the limitations of their avowed practices?

Perhaps more health fads relate to food and diet than to other matters concerned with the welfare of mankind. Obviously additional research must prove statements like the following before we can believe them: (1) seafood and milk should not be taken at the same meal; (2) acid fruits or vegetables and starches eaten together cause indigestion; (3) acid foods are responsible for headache, fatigue, and nervousness; (4) spinach contains rich quantities of usable iron; (5) salty foods cause high blood pressure, cancer, and tuberculosis; and (6) proper bowel function demands roughage in foods.

Solution of the problem relating to health fads depends upon appropriate education of youth in schools and colleges and upon sound community-health education for adults. The teacher of biological sciences could find no better place to illustrate the values of truth over fallacy and superstition than in this area. The teacher of social sciences may well accept his responsibilities toward better living in the community by helping to abolish the health fads existent therein. The teacher of mathematics should be concerned with the enormous sums spent by families for improper health care. Teachers of home economics may attempt to dissipate the fallacious beliefs about foods in their classes and in the school cafeteria. Naturally, health teachers should attack the total problem of health fads. Teachers of physical education and athletic coaches have an opportunity to correct superstitions or unfounded beliefs among their pupils and players. The school physician and nurse should explain proper professional health services to children and parents. The public-health department and voluntary health agencies should conduct sound community health-education programs. All of the municipal departments of government should be concerned with wiping out health fads and cults as a means of improving social and economic welfare.

In these days of attempting to functionalize the curriculum and vitalize the school as an important community agency, eradication of health fads would appear to deserve a prominent place in the education of both youths and adults.

Improving the Quality of Nutrition. Few major nations compare with the United States in possessing an abundance of food. As some authorities put it, although our country represents the only major nation fortunate enough to have an abundance of food, at least two-thirds of our people are improperly fed.

What are the reasons for this unfortunate condition? Basically, one might state that most persons remain unconcerned about the question of food *values* so long as they have sufficient *quantities* of food reasonably well prepared. Although economic conditions prevent certain families from obtaining an adequate diet, plain ignorance concerning the values of nutrition, wasteful means of production, improper distribution of foods, unwise purchase, and careless preparation constitute the principal reasons for a generally impoverished diet.

During the past few years progress in nutritional research has given convincing evidence that food largely determines the quality of health. A large proportion of the population remains ignorant of these important scientific researches. Controlled experimental research discloses that the normal growth and development of human beings, their ultimate size, the structure and function of organs and systems, ability to withstand certain types of infection, the attainment and maintenance of physical vigor, and even the length of life depend in no small degree on the nature and adequacy of nutrition during the various stages of the life cycle.

The social, economic, and political development of a nation relates to the adequacy of its food supply. Thus the problem of nutrition has both national and international implications. Driven to desperation, people will lie, steal, or even make war to obtain the necessary food supplies. Is it any wonder that people both here and abroad, suffering from improper nutrition or on starvation diets, find difficulty in appreciating the full meaning of democracy when palatable foods are dumped in rivers to maintain standard price rates, governmental subsidies are paid to farmers *not* to produce certain foodstuffs, and current newspapers contain stories embellished with photographs showing potato growers pouring kerosene on huge piles of their harvested product to render it unfit for human consumption? The entire problem of food, with its many ramifications, might well find a place in the core curriculum for both youths and adults.

Industrialization and Mental Health. The specialization and monotony of work, associated with the industrialization of society, tends to aggravate the problem of mental health. The gradual but persistent

trend toward congregating people in urban areas with increased nervous tensions further complicates the issue. Economic insecurity strengthens the will of pressure groups to attain the blessings available to the fortunate few who have sufficient funds to provide the necessities and some of the luxuries of life. In brief, great changes in family living have increased the difficulty of obtaining a harmonious emotional and personality adjustment, especially during childhood and adolescence.

Although well-equipped mental institutions provide expert care for a larger number of the emotionally ill than ever before, trained health workers and educators estimate that more persons sorely in need of such care remain in family circles than the present institutions can accommodate.

The total problem involves the educator, the psychiatrist, the guidance clinic, and lastly the mental institution. The educator must assume the primary role in the prevention of emotional disturbances through sound personality development. The psychiatrist will diagnose deviations from normal and recommend the appropriate treatment. The guidance clinic will assist in the adjustment of persons to the exigencies of societal membership. The mental institution will provide care for those unable to cope with the emotional problems of home and community.

With respect to schools and colleges, most emotional cases relate not only to the student himself but involve the entire family; even the school environment may represent a contributory cause. All instructional and administrative personnel in educational institutions should become familiar with the established information relative to mental hygiene and use this information in their dealings with youth.[10] Helping the student to recognize and understand his emotional problems establishes a firm foundation upon which to proceed since self-understanding constitutes the beginning of wisdom in the practice of good mental hygiene.

The Tragedy of Inadequate Dental Care. Whenever reports appear that include the physical defects found among any segment of the American population, dental defects usually head the list. School medical inspections and the examinations of men and women for military service during both world wars substantiate this fact.

[10] See pamphlet, "Mental Hygiene in the Classroom," Joint Committee on Health Problems in Education of the National Education Association and American Medical Association. Washington: National Education Association, 1945.

Three problems contributing to the basic issue of dental care remain in need of solution. They are (1) immediate service for the 90 per cent of the population suffering from dental disease and defect, (2) discovery of an effective and practical means of preventing tooth decay, and (3) practical use of the scientific information currently available relating to dental care. Improved dental service depends upon the combined activity of several groups including education, private dental practitioners, public health, and other governmental or voluntary organizations. The prevention of tooth decay must await the developments of science; possibly the appointment of a dental-caries control commission assisted by practicing dentists would help to solve this problem. The matter of acquainting people with currently available information concerning dental care rests squarely upon the schools and colleges and public-health education.

Health Education and Self-medication. On one hand health educators and medical practitioners warn the American public against self-medication. On the other hand a basic purpose of education seeks to establish wise and intelligent self-direction among students attending schools and colleges. Are these two points of view in conflict or do they complement each other?

The above question suggests several others. Just what is self-medication? Does it apply to household remedies for such conditions as the common cold, earache, toothache, and to first aid, but not to other treatments? Should the use of aspirin be regarded as self-medication? Does wise and intelligent self-direction mean consulting a physician whenever one thinks there is something wrong with him, or what criteria should be used in this matter? Is it ever wise to consult a pharmacist instead of a medical practitioner when illness threatens? As health instruction improves in schools and colleges, will self-medication increase or decrease, and will the result represent more intelligent self-direction?

Education and the medical profession need to find answers to the basic problem of self-medication and to the contributing issues raised in the preceding paragraph. Money spent for self-medication in this country far exceeds the amount paid for medical prescriptions.

Preparations used for self-medication vary widely in content and purpose. Standard compositions like aspirin and Epsom salts frequently appear in the family medicine cabinet, although their unwise use may lead to unhealthful results. Some preparations of questionable content may be harmless and worthless, sell for outlandish prices, or

contain dangerous habit-forming drugs. Most antiseptic compounds, like tincture of iodine, do not constitute a hazard owing to widespread understanding of first-aid techniques.

Self-medication with harmful or useless drugs continues to present a serious national problem. Each of several patent-medicine concerns spends more than a million dollars annually on advertising by means of newspapers, magazines, billboards, and the radio. The local druggist or pharmacist often promotes self-medication when customers request advice about colds or other ailments.

In 1906 the Federal Pure Food and Drug Act attempted to restrict the sale of patent medicines by prohibiting false statements on package labels. Although the Act has been revised and strengthened from time to time, misleading advertising techniques, not directly accompanying the product, continue to fool the public. Since 1938 the Federal Trade Commission has helped to curb the fallacious advertising of drugs, but thousands still squander their money on worthless or harmful preparations.

The whole question of self-medication needs sound educational attention. Mere prohibition by legislative act or educative precept will not suffice. Knowledge of elementary physiology and chemistry will help to expose much of the false information, and proper health education should lead to wise and intelligent self-direction that enables an individual to decide when he may safely resort to self-medication or when the condition requires the services of a qualified medical or dental practitioner.

Selecting a Competent Medical Adviser. The tradition of the family doctor dates back several generations. Artists depict him anxiously watching over the sick child in the early morning hours. Writers tell how he faithfully comes to the aid of his constituents whenever they need him and often performs miraculous cures when all hope has fled. By word of mouth, families vie with each other in extolling the extraordinary professional qualifications of their particular physicians—Dr. Brown, who pulled little Mary through a stiff siege of pneumonia, or Dr. Smith, whose sympathetic bedside manner makes it almost a pleasure to be ill!

And the average family doctor deserves this exalted position, gained by rendering brilliant service to those who need him and held steadfast by the ethics of his profession. Most laymen do not appreciate the spectacular progress made in scientific medicine during the past century. Exhaustive research and careful observation have solved the

mysteries of one disease after another and made it possible to restore to health thousands of persons who now live happy and useful lives. The training of physicians in the great universities of this country sets a pattern of excellence for other professions to follow.

The crux of the problem lies in the casual and unscientific techniques employed by most persons in selecting a competent health adviser. Besides the rather alarming number of families that neglect to arrange for any kind of health adviser, there are those who rely upon mere chance or the word of an acquaintance or friend or who depend upon a representative of one of the numerous healing arts entirely outside the medical profession. Such attitudes of unconcern suggest that these families fail to appreciate the importance of their choice. Many parents who devote weeks to planning the annual vacation, or who examine carefully the various qualities of different automobiles before purchasing one, wait until some member of the family becomes ill or injured and then call the first practitioner who comes to mind.

Effective education suggests the best means of solving this problem, although too few courses of study include the selection of a competent health adviser as an important item. Approved methods are (1) to seek the advice of the local medical association; (2) to ask the superintendent of the nearest hospital for a list of physicians recommended by that institution; or (3) to find out who takes care of certain doctors' families in the neighborhood.

Medical Economics and Social Trends. The general impression prevails that the cost of medical care exceeds the ability of most families to purchase this service. On the other hand, many persons have accepted without investigation the statement that only the very poor or very rich may enjoy adequate medical services—the one through charity, the other by reason of fortunate economic circumstances. Education has largely avoided the controversial issue which often brings certain medical groups into sharp conflict with well-meaning and public-spirited laymen who propose plans designed to obtain improved medical care for the general population.

Most health services are now financed in one or more of five ways: (1) fees paid by the recipient; (2) insurance for members of groups organized for this purpose; (3) taxation for public-health and welfare organizations; (4) indirect taxation for the support of services rendered by voluntary health organizations; and (5) charity in which physicians and dentists donate a part of their services to persons unable to pay for regular treatment. The established order in this country favors the

payment of fees by the recipient whenever possible, oftentimes with a sliding scale of prices exacted by the practitioner according to the financial status of the patient. Insurance plans have increased rapidly during the past quarter century, patterned after systems used in industry to protect the health of employees. Public-health and welfare organizations usually limit their work to activities affecting the health of the general population and attempt to avoid conflict with private practitioners, although the development of public-health and welfare services appears to narrow the margin between these services and organized medical care to a matter of degree rather than kind. Voluntary health organizations, if properly conducted, support the public agencies by accepting responsibility for needed services in the community for which public funds have not yet been appropriated. The amount of charity service given by physicians and dentists in local hospitals, clinics, and at home represents a distinct monument to the professional integrity of these men and women who willingly sacrifice personal gain for public welfare.

The subject of medical economics belongs primarily to adult education, although pupils attending the schools and colleges need information relating to the subject. Certain facts and trends may help to illustrate the necessity for sound education. Careful estimates by qualified authorities indicate that the people of this country spend twice as much for tobacco as for medical care, nearly as much for commercially advertised products used in self-medication as for services of doctors and dentists, and that only about 5 per cent of the national income goes for medical and dental expenses. On the basis of these data, the problem of medical economics does not appear to have attained prominence in the educational curricula of schools and colleges.

TABLE 2. RELATIONSHIP OF INCOME TO MEDICAL EXPENSES *

Annual Income	*Percentage of Income for Medical Care (Approximate)*
Under $1,000	6
$1,000 to $2,000	4.25
2,000 to 3,000	4
3,000 to 5,000	3.75
Over 5,000	2.50

* Data from United States Senate Committee on Education and Labor, 1945.

Many competent observers believe that socioeconomic trends favor some form of health insurance, either elective or compulsory. The

number of elective insurance plans for hospitalization or medical services shows an annual increase in recent years. Compulsory insurance may grow out of plans stimulated by industry or encouraged by compulsory health examinations of school children which have increased markedly since the beginning of the present century. Those who support plans for elective or compulsory health insurance contend that medical and dental expenses do not fall equitably upon all families (the lower income group tending to require more health services), although the need for expert care applies equally to all families, and that no single family can predict in advance what its health needs will be (and budget accordingly), whereas accurate predictions may be made for larger population groups.[11]

The Problem of Organized Medical Care. One of the most hotly contested issues of our time relates to some form of organized medical care. Nearly everyone agrees that improved hospital, dental, and medical services are needed, but the selection of a plan for providing them often arouses bitter controversy among pressure groups.

In this discussion one needs to remember that the healing art enjoys a much longer heritage than most public-welfare movements such as public education, police and fire protection, water supply and sewage disposal, lighting systems, and others. One needs further to remember the long and significant road pursued by the medical profession from the time of the medicine man, through the era of superstition and clairvoyance, the in-service training or apprenticeship with the family physician, to the great universities wherein young men of high intellectual and moral qualities now devote years of diligent study to the art and science of modern medicine.

Under the established system of private practice most of these physicians have attained an unusually high professional and social position in their respective communities. Is it any wonder that many of them are disturbed by proposals made by laymen or avowed politicians which would disrupt the existing order and which would substitute a plan wherein the physician might lose some of the freedom and prestige gained by prodigious efforts?

On the other hand, the basic goal shared by both the medical pro-

[11] Obviously the question of *medical economics* leads naturally into the problem of *organized medical care,* which follows in the next section. Students may profit by studying these two problems coincidentally.

See especially C.-E. A. Winslow, "Health Care for Americans," *Public Affairs Pamphlet* 104. New York: Public Affairs Committee, Inc., 1945.

fession and the American people (to make health services more readily available to all persons) would seem to indicate the inevitable need for certain changes or modifications in current practice. In fact several plans now in operation, and discussed in succeeding paragraphs, show that some change already has taken place.

Much of the controversy involves differences in definition of terms, with the expressions "socialized medicine" and "state medicine" tossed about with rare abandon. Socialized medicine may be defined as a system of free medical care for all, organized, operated, and regulated by the medical and allied professions. State medicine represents a system of free medical care for all, financed and regulated by, and responsible to, the state (like public education). The chief opposition to socialized medicine lies in the word "free," although most exponents of the plan hasten to point out that a given family might employ a private physician in the same manner that many families prefer private schools and colleges for their children. Even the phrase "state medicine" arouses severe antagonism among several groups who fear the proclaimed inevitable effects of political domination.[12]

Types of Voluntary Health-insurance Plans. Several types of voluntary health-insurance plans already exist. The discussion which follows attempts to point out the salient features of each of them; further information may be obtained from local sources or from national agencies. The chief ones include prepayment plans, health-insurance plans, hospital-service plans, cooperative plans, rural plans, and medical-society plans. Other names have been proposed for these services.

The prepayment plan began many years ago in a number of industries. Types of coverage include life and disability insurance, hospitalization and surgical benefits, and to some extent medical care. Sometimes the employer pays all the costs of the group-insurance protection; at other times the employee pays for the protection by voluntary pay-roll deductions. Those who favor the plan believe that it has demonstrated the universal need for protection of workers against financial loss through illness or accident.

Health-insurance plans, sometimes called sickness insurance, refer primarily to medical and hospital care for policy holders. Several commercial insurance companies offer group contracts to employees of business concerns at stipulated rates paid by the insured. Usually the

[12] A more complete review of the reasons commonly expressed for and against organized medicine appears on pp. 52-53.

employing agency makes the contract with the insurance company after a given percentage of the employees have expressed a willingness to join the organization, and weekly or monthly pay-roll deductions finance the project.

Hospital-service plans represent nonprofit prepayment systems for hospital care. Official endorsement by the American Hospital Association has strengthened this movement. These plans do not cover the professional fees of physicians, surgeons, and nurses, but do include diagnostic and X-ray services. Members choose their own medical personnel and pay them by private arrangement.

Cooperative plans evolve when a number of persons in a given locality group together to arrange with physicians and hospitals to furnish medical care. At other times a number of private physicians enter into partnership and contract with prospective patients to furnish medical care on the basis of weekly or monthly prepayments. Although branded as a "snare and a dangerous delusion" by some local medical societies, cooperative plans increase in number at a remarkable rate.

Rural plans follow the general pattern of cooperative systems wherein groups of persons arrange with the local medical society to perform certain services. Federal loans may be obtained by families to maintain the organization, which is administered by the local association of farm families or by trustees appointed to act in their behalf.

Medical-society plans differ from cooperative plans in that the former involve an entire local medical society. Oftentimes the state legislature is requested by the society to establish an enabling act permitting the plan to operate.

All plans for the group practice of medicine follow the general principle that the development of modern diagnostic methods and the purchase of expensive equipment require too costly and elaborate a plant for the individual physician to own and operate. Laboratories, X-ray machines, electrocardiograph apparatus, other expensive equipment, and trained technicians are essential. The average physician finds it impossible to obtain the necessary capital to equip and maintain the extensive and elaborate plant required. Pooling of resources makes available these necessary adjuncts to the practice of medicine.

National Health Insurance—Compulsory or Voluntary? For centuries man has fought disease, scoring countless victories over the illnesses which nature puts in his path. In recent decades improved laboratory techniques, powerful drugs, and experienced observation have illustrated the great strides made in modern medicine. Nothwithstanding

the thrill of these achievements, the benefits of medical science remain inaccessible to millions of persons who cannot afford adequate medical care. Minor ailments become chronic, and many of these ailments go undetected and unchecked until it is too late.[13]

Many persons believe that the most plausible answer to this problem involves some form of national health insurance. The main question is, shall the insurance be compulsory or voluntary? Those who favor a mandatory enactment contend that natural procrastination would defeat the very purpose the plan is designed to serve if the people were allowed a choice in the matter. Those who support voluntary insurance insist that human beings cannot be regimented to live healthfully, and through the leadership of education a voluntary system of Federal health insurance would accomplish the desired results.

Perhaps the best way to discuss this problem is to present the essential features of Federal legislation periodically appearing before Congress and to cite the points of view both in support of and in opposition to the measure. In general, the act would provide medical care for each of the 135 million people in the United States by establishing a program of expanded medical and research facilities and instituting compulsory health insurance. For the first time in our history, the government would guarantee the right of every American citizen to the protection afforded by medical science. Funds to support the plan would come from tax on income and from employers. No individual would be compelled to use the plan; thus wealthy families might continue to employ their family physicians, although they would pay the usual tax. The plan would guarantee medical care and hospitalization, including care and treatment by specialists, X rays, laboratory tests, operations, and other services. Every doctor would have access to modern equipment, specialist and consultant services, laboratory tests, and other aids. Every patient would have equal access to these facilities regardless of economic status. Local health agencies would have lists of doctors agreeing to operate under the program, and their services would be available to the general public. No doctor would be coerced to place his name on the list, and no patient would be forced to consult a given doctor; the patient might choose any doctor from the list of those participating in the plan. Besides the income from outside private practice, physicians would receive from the general fund additional remuneration on a fee basis, flat rate per capita, or salary—whichever they perferred. The United States Surgeon General

[13] E. P. Boas, "Medical Care for All," *Consumer Report*, January, 1946, p. 26.

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would administer the law in consultation with the National Advisory Medical Policy Council composed of medical personnel and laymen appointed upon recommendation of leading medical authorities. The national government would confine its activities to collecting the money for the plan and establishing minimum standards for doctors and hospitals. Passage of the bill doubtless would reduce the sale of worthless patent medicines since qualified physicians would prepare the necessary prescriptions (possibly one reason for the alleged activity of some pharmaceutical corporations to defeat the measure).

The forces in opposition to compulsory health insurance claim that the plan represents a "misnomer" having "nothing to do with health," and that it is "not insurance but a tax." They warn that many countries have tried different forms of compulsory health insurance, but nowhere has it given the satisfactory results that America enjoys with its present free enterprise. Those opposed to compulsory health insurance insist that it will interpose "a third party" (the government) between the physician and the patient.

Perhaps the most unique proposal for forestalling compulsory health insurance comes from a physician who is reported, at a medical meeting, to have advised the wives of doctors that they must join the fight against Federal health insurance and medical care by infiltrating themselves as individuals into other women's groups and influencing them to defeat the measure. He characterized the measure as the work of "political crackpots, enemies of freedom, and importers of alien philosophies." [14]

Brief Summary. By all odds the problem of organized medicine represents one of the most significant and controversial issues facing modern society, with pressure groups taking sides in heated arguments to support or oppose the various plans. As the trend of public opinion definitely moves in the direction of more and better medical care, a summary of the expressed points of view on the problem may help to clarify the basic issues.[15]

[14] H. H. Shoulders, *Time*, July 15, 1946, pp. 92-93.

[15] For an analytical survey of this problem, see R. H. Shryock, "The Development of Modern Medicine," Chaps. XVIII and XIX. New York: Alfred A. Knopf, Inc., 1947.

The success of any plan depends largely upon appropriate public-health education and the preparation of medical and associated personnel, according to J. A. Curran, "Provision of Better Medical Care," *New Steps in Public Health*. New York: Milbank Memorial Fund, 1945.

Those who *oppose* the measure contend that it will

1. Result in confusion, with a learned and respected profession reduced to a form of business espousing quantity rather than quality service.

2. Tend to give a false sense of security, because medical science has not yet found cures for many diseases.

3. Regiment people to conform to stereotyped patterns; force treatment which will instill natural fears.

4. Remove the incentive of free and private enterprise among physicians, possibly leading to professional neglect.

5. Limit the free choice of physicians by patients, denying to persons the physician of their own choice, in whom they have confidence.

6. Require patients in need of immediate services to consult supervisors, committees, and other officials before treatment may be obtained—characteristic of governmental action.

7. Lower medical standards by the insistence upon routine organization.

8. Stimulate political corruption within a social institution which has enjoyed marked freedom from this sort of thing.

9. Impede medical research and impair existing ethical standards.

10. Lead to governmental dictatorship in other professions, such as dentistry, law, and others.

11. Increase the tax burden beyond reasonable bounds; other countries which have tried the plan find it too costly.

12. Encourage persons to seek medical advice whether they need it or not; the hypochondriacs would remain away from work, thus creating another problem.

Those who *support* the measure contend that it will

1. Provide equitable opportunities for all persons to obtain needed medical care.

2. Facilitate early diagnosis and treatment of ills.

3. Instill in the public mind the fact that the health of the individual is the concern of the community, as are education and property protection, for example.

4. Ensure to the average patient adequate treatment, to the average physician an adequate wage.

5. Follow a procedure endorsed by many leading hospital authorities and social workers and already in successful operation in many industrial communities throughout the United States.

6. Guarantee medical facilities and services to patients beyond the

scope of the private physician to provide—technical facilities, hospitalization, and consultation among specialists.

7. Reduce the dubious problem of self-medication.

8. Move in the direction of universal and periodic health examinations.

9. Bring the cost of medical education within the reach of qualified young men and women who desire to enter this profession, with the security of an income following graduation and further opportunity for graduate study or research if the physician chooses to specialize.

10. Remove the elements of professional competition and fee splitting.

11. Increase the time for leisure and recreation among members of the medical profession, many of whom now work long hours with too few vacation periods.

12. Give impetus to health education by an increased general health consciousness, advancement in preventive measures, and universality of immunization.

Social Progress and Relief for Incurables. For the most part public opinion looks with disfavor upon relief methods sometimes proposed for dealing with incurables of one type or another. Even though the care of these unfortunate persons often entails huge expenditures of money which families and the public can ill afford, and relatives and friends suffer acute anguish in providing the necessary care, human sympathy rebels against taking legal action to accomplish what some individuals allege would represent the "greatest good for the greatest number."

The problem resolves itself into two main issues: eugenic sterilization and euthanasia. Eugenic sterilization involves a surgical operation that prevents parenthood without unsexing the patient or impairing his health. Euthanasia, sometimes called mercy killing, usually refers to legal provisions for an overdose of a sedative to relieve the misery of an incurable person.

The Human Betterment Foundation [16] takes the lead in presenting the case for eugenic sterilization. It reports that during the past 30 years, California state institutions have sterilized nearly 15,000 insane and feeble-minded persons. With men, the operation (vasectomy) may be performed under a local anesthetic within a few minutes and with practically no loss of time. In women, the operation (salpingectomy)

[16] "Human Sterilization Today." Los Angeles: Human Betterment Foundation.

requires opening the abdomen and is comparable in severity to the operation for chronic appendicitis.

Eugenic sterilizations have been used in American institutions since 1889, when the first operations of this kind were performed in Indiana. Some thirty states now have legislation permitting this form of treatment.

The Human Betterment Foundation lists the following advantages of eugenic sterilization: Families habitually living on public charity often have 50 per cent more children than self-supporting families. The burden of taxation steadily mounts to support the mentally diseased and defective. The large number of mentally unfit causes increase in crime and delinquency and lowers industrial efficiency. The generally admitted trend of these unfortunates toward degeneracy and the protection of them and their potential children and posterity represent the people's problem. It is a protection, not a punishment; hence no stigma of humiliation should surround it. It permits patients to return to their homes to live normal lives without the danger of producing handicapped children; thus it helps to keep homes together and to prevent the breaking up of families. It markedly decreases sex offenses, not by changing sexual life but by improving health and educational discipline and by parole supervision. It prevents the birth of children who, whether or not defective, would be brought up in unfavorable environments by mentally diseased or defective parents, or who would have to be brought up by the state.

A few years ago the newspapers quoted Police Commissioner Valentine of New York City in addressing the detectives of his department on the subject of sex crimes:

> . . . if you can't permit your little boys and girls to play in front of your own apartment or home at 12 noon in broad daylight, then, in the name of God, there is something wrong with society and humanity. . . . The problem of paroled degenerates on the streets of the city is a serious one. What shall we do with them, sterilize them?

The proposal to adopt legal provisions for an overdose of some sedative to relieve the misery of incurables (euthanasia) arouses social controversy with the majority of the public in opposition to the measure. Current thought holds to the view that throughout the development of civilization it has been regarded as improper for one person to take the life of another except by accident, as an agent of society inflicting penalty for certain criminal acts such as murder, and in time of war. This tradition has prevailed from the tribal era up to the present.

A respectable minority, on the other hand, believes that since the misery of incurables, or those supposedly incurable, is being relieved frequently by death administered by self or a close relative, appropriate legal enactments would improve the present undesirable conditions. Suicide rates steadily increase among persons in misery and those who believe themselves incurable. Relatives and friends often taken the law into their own hands and relieve the suffering of incurables—on the one hand contending that they have performed a humane and merciful act; on the other hand, and in the eyes of society, committing murder. The minority group supports the view that it would be better to place the responsibility in the hands of a capable medical jury than to leave the problem to those afflicted and to their relatives or friends.

The total problem begins to assume considerable magnitude in the proper organization of American society. Appropriate legislation will demand sound adult education as a necessary prerequisite, and upon wise education of youth will depend the general course eventually followed.

A summary of statements by those who *oppose* euthanasia include the following: Thus far civilization has viewed the plan with disfavor. Most physicians dislike to assume the necessary responsibility for it. Medical science might discover a specific cure for the ailment. The patient might recover anyway. The plan might lead to fraudulent practices, such as paying juries. Permissive legislation might later become mandatory enactment. The average patient would experience bad mental hygiene, fearing that his case might be diagnosed as incurable with the possibility of inflicted death staring him in the face. Nature often is kind to those seriously afflicted; they believe they will quickly return to normal health. Professional neglect among physicians now takes care of many cases of this type.

Those who *support* euthanasia contend: If the plan is good, traditional views should be changed. Physicians oppose the plan because society in general frowns upon it. While the patient might recover anyway, or medical science devise specific means of curing the ailment, the chances are high against either outcome. Fraudulent practices could be eliminated by changing the juries and utilizing the services of accepted medical specialists for a given disease or defect. The plan would lead to expert disposal of each case, with proper treatment where needed, thus resulting in better mental hygiene for the patient and his family. If an educational campaign were started to resolve this problem, the effects would be similar to those which supported

Sanger and the movement for birth control. At first she was chastised by public opinion; now many control clinics exist.

Problems for Education. The above discussion of selected health problems facing American democracy helps to focus attention on the need for intelligent guidance in finding solutions for many of these impending issues. In this process education must play an important role; there is no other way.

Proper education develops wholesome ideals and attitudes quite as readily as habits and skills. Education aids the individual in acquiring scientific knowledge as the basis for enduring action. The most effective value of education lies in the way it leads to wise and intelligent self-direction toward maintaining one's own health and improving the lives of others.

When the schools and colleges, parents in the home, and the community as a whole contribute in positive fashion to better living, many of the health problems and hazards of present-day society will disappear. And only through education, in its various manifestations, may appropriate solutions to these problems and hazards be expected.

Summary

The health problems confronting a democratic society generally parallel those found in countries with different forms of government since biology respects no particular form of governmental organization. The problems in any country change from generation to generation as a result of scientific discovery, modification of environmental factors, and the force of expressed public opinion. In America, where freedom of expression and opportunity prevail, the changing and growing health problems relate to forces associated with improved medical science, higher standards of living, increased attention to public health, and enriched educational opportunities.

Some of the major problems currently existing in this country may be summarized as follows:

1. Only through the concerted action of individuals and groups may *fitness* and *vitality* be raised to the level of excellence they deserve as national resources of paramount importance.

2. Official public-health organizations, established and maintained to protect a reasonably static population, experience difficulty in coping with problems that arise because of migrating groups (*shifts in population*). Public-health education, together with instruction in schools and colleges, could help in solving this problem.

3. *Mortality and morbidity statistics* serve as one reliable measure of the nation's health. On the basis of official data the nation's health is shown to have steadily improved, although greater advancement could easily be obtained if persons followed the commonly known and approved health practices.

4. Improvement in the kind and amount of organized public-health, educational, and other agencies gradually increases the anticipated *life span*. The consequently larger number of older men and women who continue with their work and the mechanization of industry whereby machines substitute for human hands result in fewer jobs for youth and the need for socioeconomic reorganization. Education ought to provide more varied opportunities for children and young adults and provide them over a longer period. Social planning should ensure adequate old-age pensions for persons deserving such aid. Public health needs to direct greater attention to the diseases and unhealthful conditions as well as to emotional disturbances of middle life. Wholesome recreation begins to emerge as one of life's necessities next to food, shelter, and clothing.

5. The problem of *physical fitness* becomes acute largely because of differences of opinion, even among experts, concerning the amount and type of exercise most beneficial to health. The war years helped to emphasize this problem.

6. *Selective service* enabled millions of men and women to have free and almost compulsory health care while serving in the armed forces. The effects of these experiences on former military personnel, on the temporary medical officers and enlisted men who attended them, and on the general public may lead to an increasing liberalization of group medical care and to the attendant controversies associated therewith.

7. Although the struggle to control *tuberculosis* has brought remarkable results, much remains to be done. Only the combined and effective efforts of organized public health, voluntary health agencies, and education may lead to the elimination of this disease as a persistent health problem in American society.

8. Actual damage to the heart (*heart disease*) seldom can be repaired. Appropriate medical supervision, however, determines the functional condition of the heart and the circulatory system and usually suggests a plan whereby the afflicted person may pursue a normal and useful life within the limits imposed by the specific condition. In this plan, sound health education plays an important role.

9. The present approach to the *cancer* problem through medical research gives evidence of hope, even though the actual cause remains

in doubt. Adult education concerning the disease has a long way to go, even in acquainting the public with information currently available.

10. Early medical attention and expert nursing care greatly reduce the dangers of *pneumonia*. Health education could reduce the morbidity and mortality rates of pneumonia by teaching persons how to protect their general health, what to do when danger threatens, and proper home care of the sick.

11. About one-half the cases of *infantile paralysis* obtain complete recovery by appropriate medical care. The great educational results associated with the annual "march of dimes" campaign suggest the value of this type of enterprise in molding public opinion toward an awareness of conditions affecting normal health.

12. The problem of *accidents and safety* clearly deserves immediate and concerted attention by the American people. Most authorities agree that education represents the focal point in preventing accidents. Few other subjects present such a wealth of objective evidence for practical learning experiences in the home, school, and community.

13. Solution of the problem relating to *health fads* depends upon the scientific education of youth in schools and colleges and upon sound community-health education. In these days of attempting to functionalize the curriculum and vitalize the school as an important community agency, eradication of health fads would appear to deserve a prominent place in the education of both youth and adults.

14. The problem of *food supply* has both national and international implications. Driven to desperation in matters of food, people will lie, steal, or even make war to obtain relief from hunger. Is it any wonder that people both here and abroad find difficulty in appreciating the full meaning of democracy when palatable foods are willfully destroyed for one reason or another? The entire problem of food, with its many ramifications, might well have an important place in the core curriculum of any school.

15. The total problem of *mental health* involves the educator, the psychiatrist, the guidance clinic, and lastly the mental institution. The educator assumes the primary role in the prevention of emotional disturbances through sound personality development. The psychiatrist diagnoses deviations from normal and recommends the appropriate treatment. The guidance clinic assists in the adjustment of individuals to the exigencies of societal membership. The mental institution provides care for those unable to cope with the emotional problems of home and community.

16. Whenever reports appear that include the physical defects found among any segment of the American population, *dental defects* usually head the list. The contributing problems are (*a*) immediate service for the 90 per cent of the population suffering from dental disease or defect, (*b*) discovery of an effective and practical means of preventing tooth decay, and (*c*) practical use of the scientific information currently available.

17. The entire problem of *self-medication* requires educational attention. Mere prohibition by legislative act or educative precept will not suffice. Knowledge of elementary physiology and chemistry helps to expose much of the false information, and proper health education should lead to wise and intelligent self-direction that enables an individual to decide when he may safely resort to self-medication or when the condition requires the services of a qualified medical or dental practitioner.

18. Many parents wait until some member of the family becomes ill or injured before selecting a *competent health adviser* and then call the first practitioner who comes to mind. Approved methods of selection are (*a*) to ask the advice of the local medical association, (*b*) to obtain from the superintendent of the nearest hospital a list of physicians recommended by that institution, or (*c*) to find out who takes care of doctors' families in the neighborhood.

19. The problem of *medical economics* largely belongs to adult education, although students attending the schools and colleges need information on the subject. Careful estimates by qualified authorities indicate that the people of this country spend twice as much for tobacco as for medical care, nearly as much for commercially advertised products used in self-medication as for the services of doctors and dentists, and that only about 5 per cent of the national income goes for medical and dental expenses.

20. As the trend of public opinion moves steadily in the direction of demanding improved health services, the problem of *organized medical care* becomes more significant. By all odds this problem represents one of the most controversial issues facing modern society, with pressure groups taking sides in heated arguments to support or oppose the various plans in operation or in prospect. Public opinion generally seems to favor some sort of organized medical care, but the precise direction the movement should take remains in doubt. Public education can ill afford to ignore this controversial issue, which affects every home in every district of every state.

21. The problem of *incurables* just begins to attract attention in newspaper and magazine articles, which normally serve as barometers for impending social issues. Education might well take a hand in this problem, not by advocating one point of view but by presenting logically all sides of the question.

The force of education could go a long way in helping to solve or remove the numerous health problems and hazards that face American democratic society. The functional curriculum proposed by many leading educators should give an important place to these issues. The chapter that follows, dealing with individual and societal growth and development, contains information basic to many of the problems described above.

Questions and Problems for Discussion

1. Make a list of the health problems confronting the people of this country. Ask an instructor of the social sciences to assist you in preparing a list of such problems in another country with a different form of government. Compare the two lists in terms of their similarities and dissimilarities. From these observations formulate principles with respect to the role of education in a democracy for the solution of impending health problems.

2. What laws or regulations might help in controlling unhealthful conditions arising from sudden shifts in population? What responsibility should education assume in the establishment of these mandates?

3. Describe the various problems, both social and economic, associated with the increase in life expectancy. Formulate one or more principles tc serve as guides to education in performing its appropriate function in this matter.

4. Obtain the latest information on accidents and safety from local and state sources and from the National Safety Council. Plan a satisfactory safety-education program for an elementary school, a secondary school, or a college. Upon what principles of education have you based your program?

5. List the health fads you have observed or heard discussed within the past few months. Which of these fads are based upon the semblance of scientific fact? How might proper education have prevented the acceptance of these fads by their adherents?

6. Problems of food supply center around production and distribution. Can you describe a practical plan that would ensure an adequate food supply for the people of this country? What factors and forces support your plan and what ones oppose it? What should be done?

7. What factors and forces give rise to the increasing problems associated with mental health in this country? Explain in some detail the appropriate responsibilities and interrelationships of (*a*) education, (*b*) psychiatry, (*c*) guidance clinics, and (*d*) mental institutions. Why do persons gener-

ally brag about the diseases and operations they have had but feel ashamed of or conceal mental or emotional afflictions connected with themselves or their families?

8. What is self-medication? Do you believe that more health education in schools and colleges will decrease or increase the amount of self-medication in this country? Recently, a graduate student at a large university entered a store just off the campus and asked the pharmacist, "What does Dr. — [naming a prominent physician in the locality] prescribe for colds?" Replied the pharmacist, "I can't give you that information, but here is a good remedy." Does this promote the practice of self-medication? What, if anything, should be done about problems of this type?

9. Define the term "organized medical care." Describe the various plans now in operation or proposed. What plan of medical care in your opinion would best serve the people of this country? What forces would support and oppose your proposal? List the practical steps that might be taken to put your plan into operation.

10. Define eugenic sterilization and euthanasia. If you were the principal of a secondary school or the dean of a college, what position would you take concerning the instruction of students about these topics? Give reasons for your answer. If you were in charge of adult education in a medium-sized city and a responsible group of citizens requested instruction on these topics, what position would you take?

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CHAPTER 3

THE NATURE OF GROWTH AND DEVELOPMENT

The Broad Viewpoint. The study of growth and development often presents to the young or inexperienced teacher a situation fraught with the complexities of scientific terminology and the confusion of listed exceptions. As one beginning student of the subject remarked, "Why can't they say it in simple language and mean what they say without hedging?"

The person who desires to acquaint himself with the fundamentals of growth and development must keep in mind broad concepts of nature and nurture. Basically, growth and development represent two separate although closely interrelated processes, depending in turn upon the associated factors of heredity and environment. Further, a practical study of this area not only relates to individual well-being but also includes comprehension of societal expansion and evolution. The terms used in anatomy and physiology are essential for a thorough understanding of this field and, of course, hold no fears for the person familiar with these sciences, although the uninitiated may struggle with long names that often refer to small items of bodily structure or function.

Some years ago writers on the subject inclined toward describing "normal" manifestations of growth and development of individuals at various age or grade levels and explaining deviations from this standard as "abnormal." More recently authorities such as A. T. Jersild and others emphasize the principle of individual differences, although maintaining that standards and norms serve a useful purpose in understanding the needs and interests of youth.[1] Some authorities hold to the extreme position that "normal" designates only a mathematical average

[1] A. T. Jersild and Associates, "Child Development and the Curriculum," pp. 26-27. New York: Bureau of Publications, Teachers College, Columbia University, 1946. See also M. S. Breckenridge and E. L. Vincent, "Child Development," pp. 21-23. Philadelphia: W. B. Saunders Company, 1943.

unsuited for use as the chief instrument in studying individual and group behavior.

That teachers generally need to know the basic concepts of growth and development goes unchallenged. The correlative that too few teachers have a working knowledge and understanding of these phenomena may account in part for the increasing number of courses on the subject appearing in several of the leading schools and colleges of education. This chapter presents only the bare outline of information and principles believed essential for teachers concerned with health education. All teachers, and especially those of health education, will profit by courses dealing specifically with the growth and development of children and young adults and related courses dealing with the evolution of society.

Definitions and Scope. Growth refers primarily to an increase in bulk or size. In the human growth begins with the division and redivision of the fertilized ovum. Within the wall of the fertilized ovum lie the twenty-four pairs of beadlike chromosomes which control physical inheritance. Each pair of these chromosomes differs from the others in size, shape, and the contributions made to the new individual. Once the cell becomes fertilized, the chromosomes within the nucleus split lengthwise. One-half of each chromosome falls into each half of the cell. A wall soon separates the halves and each half grows into a cell similar to the original one, capable in itself of dividing and performing all the functions of living matter. These cells continue to divide, forming the body of the newborn child.

Up to a certain point this division simply results in a mass of similar cells, each a perfect duplicate of the one from which it came. Later the cells begin to assume special shapes and functions. Some are destined to form bones, others become muscles, and still others comprise the separate tissues necessary for the structure and function of the body. But the genes within the chromosomes in the nucleus of each of these cells are the same; they do not change. They represent the same constituency as the genes which make up the fertilized cell, twenty-four from the father in the sperm and twenty-four from the mother in the ovum.

Growth, then, begins with the union of the sperm and the ovum. The multitude of cells which result are conditioned by the combination of genes from generations of parents, and finally produce a fully developed individual possessing certain characteristics and abilities com-

mon to all members of the human race and exhibiting others peculiar only to himself.

Development, as applied to the individual, represents the unfolding of his native abilities, within the limits of inherent capacity. Thus a person may have the capacity to be tall or short, quick to comprehend abstract concepts or slow in getting the thought from the printed page. Development indicates the degree to which a person approximates the limits of his potentialities.

Regular and gradual physical growth is an indication of health in the child. Except for the prenatal period and early days of infancy, growth and development proceed concurrently. As the body grows in size it also develops in strength, and the young child soon learns to walk, talk, and feed himself. During the early years of school, physical growth and the development of various habits and abilities about equally concern the skillful teacher. There comes a time, however, when increase in the number of cells ceases, and the individual has reached his full growth. Throughout the years of school attendance, education emphasizes the development of powers adjudged worthy for the individual and for society.

Numerous factors may retard growth or impede development. Faulty nutrition and illness often affect these qualities to the degree that one child in the family lacks the strength and vigor enjoyed by his brothers or sisters. During the growing years the child requires sufficient basic foods, not only to supply materials for increasing the number of cells, but also to repair cells broken down in the process of an active life. He needs plenty of fruit, fresh vegetables, whole-wheat grains, eggs, milk, and animal proteins to complete the body plan. The toxins produced by an illness may retard growth and development. A disease or pathological condition may affect the appetite so that the child does not take the foods needed to repair the body during an illness and to facilitate the normal rate of growth.

Unfavorable aspects of the environment sometimes lead to restrictions in growth and development. One child may be shorter and lighter than brothers and sisters born at periods when the family enjoyed greater financial security. The effects of housing, broken homes, availability of professional health services, and work represent factors of serious concern to parents, teachers, and others interested in the problems of youth.

Nature provides certain safeguards, however, to perpetuate biological inheritance. In the division of the original fertilized ovum, specialized cells retain their chromosomes without change, becoming a part

of the sperm or egg cells later in life. Through these cells physical inheritance passes from one generation to the next, thus preserving family characteristics. This explains why father's firm chin may characterize the face of his son, or why grandmother's flaming tresses may adorn the curly-haired redhead born to parents who take pride in their straight black hair.

Historical Implications. All people trace their ancestry from the same origin and species. The twenty-four chromosomes from each parent, however, may result in numerous combinations of physical characteristics. Likewise the chromosomes from four grandparents and eight great-grandparents influence inheritance. These phenomena add to the mystery concerning the reasons why startling family resemblances continue from one generation to another.

Scheinfeld [2] suggests that racial groups owe their differences to chance mutations. People of various racial patterns who differed from the rest of humanity in a similar way gathered together, feeling a kinship because of their likeness or believing that they might become companionable. These groups wandered from their original settlements to live together, to search for food, or for some other equally good reason. In their isolation the characteristics that brought them together were transmitted to their children.

Whatever the cause, genetic differences arose in nationalities. Making the most of the natural resources in their environment, one group of people might exert a powerful influence on world affairs, or the absence of favorable hereditary and environmental factors might lead to capture or death at the hands of stronger tribes. Anthropologists report a "period of integration," or migration, when small bands roamed the earth. Much later these groups intermingled and joined forces. For example, people from the coast of Spain moved to Ireland as early as 2000 B.C.; later came the Celts from the Rhine region, then the Norsemen in A.D. 750, and the Anglo-Saxons in 1172.

Even though small clans sometimes attempted to isolate themselves, they could not retain a pure strain of inheritance. Other people drifted into the group as time passed and intermingled with the original inhabitants. This helps to explain the inequalities of inheritance in a given country, even though a common language prevails. The members of a generation may control within limits the inheritance of their children by improved nutrition, shelter, and guidance, but they cannot

[2] Amram Scheinfeld, "You and Heredity," pp. 16 and 341. New York: Frederick A. Stokes Company, 1939.

change the genes which predestine the color of the eyes, the pattern of the bony structure, the texture of the hair, or other physical characteristics of man.

Man has increased in stature. Parsons[3] studied the femurs of Englishmen of the thirteenth and fifteenth centuries and found these men to average about 65.75 inches in height. In 1919 this height had increased to 67.3 inches. Mosher reports that Stanford University women in 1921 were 1 inch taller than the undergraduate women of 30 years before.[4] Army statistics show that inductees of the Second World War (twenty to twenty-nine years) were ⅔ inch taller than draftees (twenty-one to thirty years) in 1917.

What factors contribute to this increase in stature? Certainly not a change in the chromosomes. Most authorities attribute the change to improved conditions of nutrition, housing, work, and child care. Men have made use of scientific discoveries to improve the welfare of society. On the other hand, improper heredity, low economic status, malnutrition, and communicable disease prevent maximum growth and development among children. Recognizing the handicap of inferior heredity, persons of marriageable age should take cognizance of this problem. Federal and state agencies assist local communities where financial and social conditions threaten to impair the health of families. Recent housing projects and slum-clearance programs are aimed in this direction. Boards of health and education strive continuously to utilize scientific information so as to prevent or control communicable disease, especially among children. The practical elimination of smallpox and yellow fever in America, and the reduction of diphtheria and scarlet fever, indicate the significant role of public health when the cause and cure relating to a given disease become known. Better environmental conditions and education favorably affect social inheritance and decidedly improve the chances of a child's being wellborn.

Influence of Heredity. The evolutionary pattern of man provides for an upright skeleton complete with head, trunk, and extremities, together with two eyes, two ears, a nose, ten fingers, ten toes, two sets of teeth, a full complement of functional organs, and a limited number of instinctive reactions. Within the confines of this pattern, individual

[3] F. G. Parsons, "Measurements of Mediaeval English Femurs," *Journal of Anatomy and Physiology*, Vol. 48, p. 266, 1914.

[4] C. D. Mosher, "Concerning the Size of Women," *California State Journal of Medicine*, Vol. 19, p. 53, 1921.

differences account for the wide variation in appearance and ability observed at every hand. Except for identical twins, no two persons closely resemble each other. The genes and environment are responsible for this variable phenomenon. Even though one person has the physical stature and appearance similar to another's, their intellectual and social attributes may differ so widely that qualified teachers and parents recognize separately the needs and interests of each child.

Since the genes affect traits of height and build, the children of tall parents usually exceed in stature the mean average of the total population. Strangely enough, perhaps, these children may not attain a height greater than their parents'. Children of short parents, on the other hand, may become taller than their parents owing to the tendency of nature to approximate the average. Pearson gives proof of this principle in his citation of a group of men averaging 72 inches in height whose sons were about an inch shorter, and another group of fathers, 68 inches in stature, whose sons were 1.3 inches taller.[5] Exceptions will arise, of course, attributable in part to characteristics found in grandparents or blood relatives of a previous generation.

Influence of Nationality. Evidence suggests that nationality may affect growth and development. Children from Sweden and Great Britain continue their growth for a period about four years longer than youths in some other countries, and present an average height two inches taller than persons of certain other nationalities.

The people from Italy, China, the Philippines, and Japan usually are short and of stocky build. Children in Northern Europe and the United States appear taller and better developed than similar groups from Southern Europe. Whether the advantage is definitely influenced by heredity or is due to the superior food and environment is not clear. Studies reveal that children born in the United States to Japanese parents are several inches taller than their fathers and mothers. Other studies show that Chinese children born in China are an inch shorter than those born in Hawaii. Still other reports indicate that certain immigrant families in the United States have taller and sturdier children because of the abundance of food in this country.

Scheinfeld does not hold the genes responsible for nationality differences in growth and development, but suggests that differences result from chance.[6] Early peoples of similar build and characteristics

[5] Karl Pearson, "Grammar of Science," p. 456. London: Adam and Charles Black, 1900.

[6] Scheinfeld, *op. cit.*, Chap. XXXVIII.

may have settled in the same areas. Genes which produced the original likeness doubtless continue to produce this dominating characteristic, irrespective of nationality. Environment improves the opportunities for growth and development only if conditions in a given country remain favorable. The present food shortage and poor living conditions in the devastated countries of Europe and Asia may decidedly influence the growth and development of children in these regions.

Influence of Geography. Certain conditions of soil, plant and animal life, climate, and weather may affect health, but difficulties arise in establishing a true relationship between these factors. Man overcomes if possible those health hazards which distress him, and moves away from the dangerous ones that he cannot eradicate for reasons beyond his control. At times he may not be able to escape such dangers as hookworm, malaria, typhoid fever, smallpox, and goiter. Such hazards continue because of lack of cooperation, ignorance, carelessness, or other conditions equally distressing.

Hookworm is caused by a whitish, small worm which infects the soil in certain areas where outside toilets still exist. The worm penetrates the skin of persons walking about without shoes. Infected children do not grow normally and may be retarded by several years.

The Anopheles mosquito spreads malaria in a few states by biting the sick and, some two weeks later, biting and infecting well persons.

Smallpox could be entirely eliminated if everybody would protect himself by vaccination at prescribed intervals.

Carelessness accounts for the great majority of colds. This is especially important to health since neglected colds may increase the child's susceptibility to more dangerous respiratory and communicable diseases.

The rheumatic diseases that are associated with local infections of joints, tonsils, teeth, and intestines appear to be peculiar to the North Temperate Zone during the winter and spring months. One of this group of ailments (rheumatic fever) may leave the child with a permanently damaged heart.

The relationship between goiter and the low iodine content in drinking water is easily established.

Pellagra, due to insufficient nicotinic acid in the diet, represents a social and economic problem in some parts of the South.

Country homes should offer better health conditions for growing children than city apartment dwellings, although the evidence oftentimes favors the more congested areas. The percentage of men from

rural sectors rejected by military authorities for physical reasons exceeded those from urban communities in both world wars. Perhaps the advantage in cities depends upon such factors as better facilities for sanitation, the efficient efforts of health departments to keep food and water clean and free from impurities, and the opportunity afforded for acquired or natural immunity.

Influence of Intelligence. Intelligence or mental growth continues through infancy, childhood, and well into adolescence in a manner similar to physical growth; maximum in both is reached at about the same time.[7] Whether intelligence as the capacity to learn depends more on inheritance than on the influences of environment constitutes a rather debatable question with evidence on both sides depending upon the nature of the investigation and the interpretation of results.

Studies of the relationships between growth and development and intelligence present evidence of less conflicting nature.[8] The more intelligent children appear to have fewer physical defects. Malnutrition does not seem to affect the capacity for learning. Remediable defects in the main do not tend to influence mental ability, although such conditions as deafness and seriously impaired vision do retard the child's progress in school. Certain harmful conditions in prenatal life, injury to the head and brain during delivery, or disease may retard intelligence or ability. The occupation of the father and the intelligence of the child seem to show a more or less direct relationship. Gifted children tend to have better than average health and physical development. Considerable evidence shows that idiocy, insanity, and degrees of low intelligence may be inherited. Idiots are apt to have poorer physical status than imbeciles or morons; and imbeciles are not so tall nor so well developed generally as normal children of the same age. On the other hand, the child's brain approximates adult size at about the age of seven or eight. Consequently, prenatal and early child care would appear to represent important factors in the optimum development of the brain and of the cells associated with intelligence.

Influence of Economic and Social Factors. Favorable economic and social conditions enable the family to buy food, clothing, and a home conducive to healthful living. Such families can afford frequent and efficient medical care to maintain health, to render valuable service in

[7] Jersild and Associates, *op. cit.*, p. 184.

[8] L. M. Terman, "Genetic Studies of Genius," Vol. I, p. 145. Palo Alto: Stanford University Press, 1925.

the event of serious accidents, or to treat costly diseases such as tuberculosis, infantile paralysis, orthopedic conditions, and impairments of the eyes and ears. Parents and children in well-to-do homes may enjoy leisure and healthful recreation of which families with a low income are deprived.

Children from good homes with corresponding care average about 2 inches taller and 4 pounds heavier than children from less favorable homes located in factory districts. School children living in medium residential districts seem to fall about midway between these two groups; they are not so tall nor heavy as the better income group, but taller and better built than children from poor families.

Growth appears to be conditioned by the social and economic environment, since average children in private schools are taller and heavier than children in public schools. This factor is not peculiar to the United States alone, because children of low-income groups in the Netherlands are not so tall as those in better financial circumstances. Students in British medical schools are about 4 inches taller than the average working man of that country. Lack of the essentials in food and housing, worry, and overwork quite definitely affect the physical development of young people and take their toll even though the child himself is not a laborer.

Certain wage earners run the serious risk of contracting occupational diseases. Tuberculosis and respiratory conditions are associated with the dust, and irregular heartbeat with nicotine, in the cigar industry. Because of dust, garment workers show a high incidence of tuberculosis, bronchitis, and eye conditions, and these same trades often cause sluggish intestines because of the sedentary character of sewing and cutting operations. The intense heat and rapid temperature changes in steel mills contribute to the incidence of pneumonia. Silicosis among granite and stone workers, lead poisoning as a danger to painters, the possibility of radium poisoning in watch making, eye difficulties and cataracts common to glass blowers, hernias, respiratory conditions, and heart defects from the dust and heavy work in foundries—all are but a few of the well-known conditions which definitely affect the health of the worker and the consequent income available to himself and his family. Knowledge of these factors serves a useful purpose in vocational-guidance classes conducted in schools and colleges.

Persons in the upper income brackets also have problems that affect health and development. Although poverty represents a definite cause of poor homes and the lack of child care, parents with money oftentimes fail to buy the correct foods for their children. Malnutrition and

improper nutrition are common among both the rich and the poor. The worry and anxiety over losing their wealth, the constant pressure of maintaining social acceptance by persons regarded as important, and the craving for greater freedom of action may cause affluent parents to neglect their own health and to provide homes for children quite unsuited to wholesome growth and development.

Height-weight-age Tables. These tables assist classroom teachers in screening children suspected of malnutrition or disease that may retard normal growth and development. They also serve as a distinct teaching aid in the program of health and safety instruction. An effort to improve weight and height of children in relation to their age appeals to parents, often gaining their support for the entire school-health program. Children themselves frequently become so interested in their own weight and height that suggestions about proper diet and sleep receive immediate acceptance, and arrangements for the correction of their remediable defects gain approval if such correction points to improvement in physical condition.

All children will not approximate the standards given on the height-weight charts. These standards are based on averages and may not apply strictly to individuals. Body structure and growth, affected by inheritance and many other factors, will differ among children. The rate of growth, moreover, reaches plateaus at certain periods of the year and moves forward rapidly at other periods. As a rule children grow less rapidly at ten, eleven, and twelve years of age than during the ages from twelve to fourteen. The yearly growth usually reaches its peak from October to December after the summer vacation and before the child begins to tire from school activities. Growth as indicated by gain in height and weight should be used only as a rough measurement for determining regular increase in body size until the youth reaches maturity. Loss of weight, or too rapid gain in weight, should be checked by a competent physician for underlying causes. Correction of cause rests with the physician.

Body structure largely determines weight. The large-boned boy or girl of a given age and height will be heavier than a small-boned child of the same age and height. The texture of subcutaneous and muscular tissue indicates health or the lack of good physical condition. Difficulties with height-weight-age standards have led some investigators to favor measures of subcutaneous tissue and body build as a more reliable single means of evaluating growth.

An increasing number of schools employ the Wetzel Grid tech-

nique for evaluating the quality of physical growth and development among pupils. This technique follows the basic principle that children exemplify certain body types, and that the normal growth pattern for one type differs from others. Once the fundamental pattern has been established for each child by competent authority, the plotting of height and weight data on prescribed charts becomes relatively simple and the interpretation of these data enables the clinician to evaluate the direction and speed of expected growth (Fig. 4).

Influence of Individual Differences. The variety of inherited traits, the degree of security and opportunity afforded by the environment, and the differences between chronological and physiological age account for variations among individual children. These differences are reflected in the diversity of structural patterns, mental and manual abilities, dispositions, and reactions to situations involving other persons.

Children differ within themselves in their abilities and reactions. They may change in their reactions from day to day, or from one situation to another, depending upon the elements involved. Children successful in academic classes may not get along well with other children in social affairs or participate in regularly scheduled games with sufficient skill to satisfy the group. Others may be socially astute but have difficulty with classwork.

These differences in individuals probably result in the good fortune of society as a whole, since they account for outstanding abilities in many fields of endeavor and these lead to scientific miracles in health and medicine and other fields. Individual differences account also for the great artists, teachers, sculptors, dramatists, athletes, and others gifted in the arts rather than the sciences.

The attempt to equalize ability would tend toward mediocrity for all. The level of a child's ability cannot be raised to show marked improvement in all fields of endeavor; rather education should try to stimulate natural or outstanding traits or endowments and encourage persistence in the development of abilities which suggest maximum expression. This encouragement forms the basis of the plan used in schools to develop the whole child and to bring out those special qualities which produce the world's outstanding doctors, lawyers, teachers, nurses, scientists, musicians, authors, and engineers.

Physique. A person inherits a physical organization peculiar to himself. By following a desirable program of education and training he may develop his physique to the limits of its capacity and live a happy

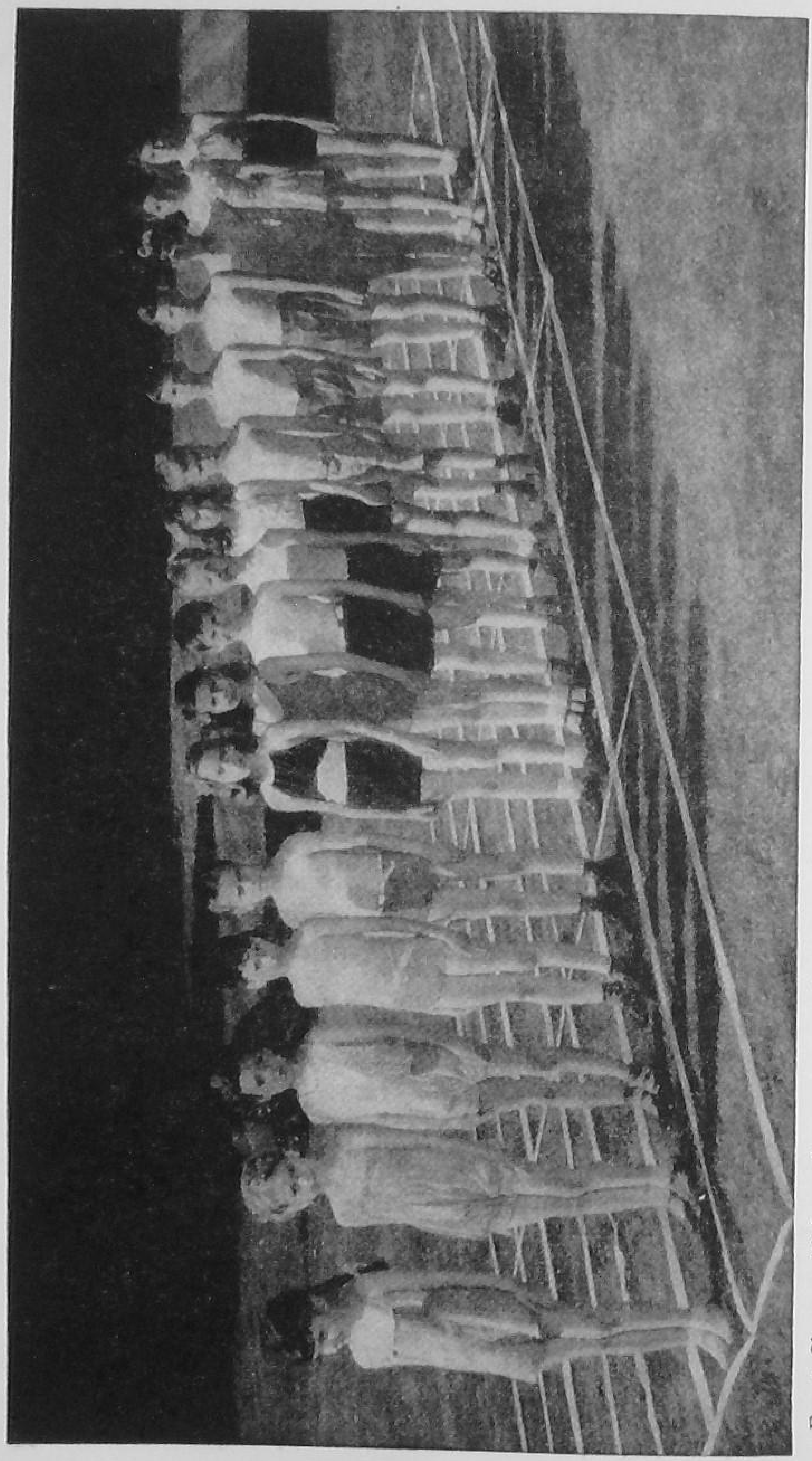

Fig. 4. Sixteen children of one type, ranging in age from six to twelve years, who illustrate normal growth. (*Copyright Abbott Laboratories.*)

and useful life. By neglecting the winnings of the race in his failure to utilize proved scientific procedures, he may destroy the endowments nature has given him, ruin his health, and fail in the service everyone owes to society.

The effects of good and bad practice are observed in the adults of any community of average size. Great credit belongs to the person with a strong physique who uses his talents wisely for the betterment of himself and mankind. Even greater credit should go to the man or woman with lower than average strength and endurance who, by protecting and developing his natural resources, makes an outstanding contribution to the group associated with him or to the profession he represents. The person who dissipates his energies and fails to live up to his physical potentialities in serving himself and others probably deserves more serious condemnation than the social and moral code now permits. Schools and colleges have a profound responsibility in directing the efforts of students toward protecting and developing the physique they possess as a means of ensuring now a happier and fitter youth of America and later a nation of citizens equipped to further the advancement of civilization.

The fact remains that the structure and function of one body may surpass another, even in the same family. Some children are born with certain reactions within their systems that protect them from diphtheria, smallpox, or perhaps measles. These immunities come from the mother and, in most cases, protect the child only for a matter of months. The Schick test may show a longer period of protection from diphtheria, but whether this results from antibodies obtained from the mother or from acquired immunity cannot be determined.

Certain persons appear to be predisposed to tuberculosis. Family histories reveal several generations of persons who have contracted this disease or shown suspicious symptoms. Tuberculosis can be acquired only by contact with the germ transmitted by persons actively ill with the disease or from unpasteurized milk from infected cows.[9] The greatest danger comes from living in a home with an active case. Children of a tubercular parent may not contract the disease if proper precautions are taken in the avoidance of personal contact. Tuberculosis often develops where there are conditions of lowered vitality resulting from other illnesses, improper care during illness, fatigue, or lack of adequate food and shelter. Development of tuberculosis relates

[9] Owing to the efficiency of public-health organizations, transmission of the disease by unpasteurized milk from infected cows (called bovine tuberculosis) is exceedingly rare.

to problems of environment, although many persons may live and work under similar conditions and only a few of them succumb to the disease. Doubtless physique has much to do with the degree of resistance manifested.

From an educational point of view, physique relates to both inheritance and environment. The instruction of young men and young women in marriage and parenthood entails factors associated with physique and its relationship to inheritance. The problems of physique and environment become the proper concern of education at all ages as the schools and colleges direct their efforts toward building strong bodies, developing the habits and attitudes of wholesome living, and protecting the individual against harmful elements in the surrounding locale.

For the individual, development and protection of physique largely becomes a personal matter (except for the very young child), conditioned by the effectiveness of education. A thorough knowledge and understanding of physique should encourage him to keep well, to have regular health examinations by a reliable physician, and to follow the suggestions of his medical adviser. He should learn and practice the techniques of good physical condition as they relate to exercise, nutrition, rest, emotional satisfactions, and other matters. The educated person does not make a fetish of bulging biceps or superior lung capacity; rather, he lives a full and active life, intersperses periods of wholesome recreation with good hard work, and keeps himself in the kind of physical condition that enables him to work and play with efficiency and satisfaction.

Rates of Growth. Growth occurs when comparatively simple foods are taken into the body, digested, assimilated, and used to produce and repair complex body cells. Growth begins when the sperm penetrates the ovum in the Fallopian tube and continues through the prenatal period, after birth, and until the person attains the age of about twenty years.

During the 280 days of pregnancy, the one cell multiplies time and again to produce an infant weighing, on the average, 7½ pounds. In the first year of life the child grows from 20 to 28 inches and increases his weight to about three times the weight at birth. It is interesting to note that body weight normally doubles six successive times between the sixth month of prenatal life and the twenty-second year. The average annual gain in weight for public-school children (ages six to sixteen) is from 4½ pounds to 8¾ pounds each year.

Occasionally the thirteen-year-old girl may be unable to wear clothes bought for her only a few months before. Sometimes fourteen-year-old boys find their hands and wrists dangling out of their sleeves and pants legs too short and too tight. Ordinarily, however, growth is steady and gradual with periods of acceleration coming just as children enter nursery schools (at four) and continuing until this "growing-up" period ends with a final spurt from twelve to fourteen years of age.

Growth in these early years frequently is interrupted by whooping cough, diphtheria, measles, and other communicable diseases. Such disorders may interfere with the normal body growth and the attainment of full development of later years. There is evidence, moreover, that children thus afflicted are shorter and lighter than children who progress in school year after year without interruption, notwithstanding exceptions to the contrary.

Seasonal Growth. Evidence points to greatest gain in seasonal growth for school children during the months of October, November, and December, with the least gain and possible loss in April, May, and June. Studies further indicate these trends in the children of Canada, England, Scotland, Denmark, and Germany as well as the United States.

Numerous reasons may explain these trends. The 10 weeks of school vacation normally permit rest, unlimited play out of doors in the sun, and long hours of sleep. The importance of diet cannot be denied, and children usually take most of their meals at home during the summer months, appetite increasing with larger amounts of physical activity under pleasant conditions unencumbered by emotional strain. During summer months more fresh-grown fruits and vegetables are available, and these contribute vitamins and minerals in abundance, especially vitamins which promote growth. Vitamin B stimulates the appetite and is essential to the metabolism of calcium and phosphorus necessary to bone growth. The out-of-door life facilitates action on the skin of ultraviolet light contained in the direct rays of the sun; these rays help to convert the ergosterol of the sebaceous gland secretions into vitamin D, thus providing one of the most effective ways of supplying the body with the bone-growth vitamin.

Children vary in the number of hours needed for sleep. Since the sleeping hours are those in which the body stores energy for the activities of the following day, a child should go to bed early and awaken completely rested. Sufficient rest is not always possible during the school months with the fatiguing hours spent in classrooms, required home work, and the assignment of home chores. All of these factors

together comprise a full and tiring day. Vacations usually provide time for more hours of relaxation, sleep, and wholesome recreation.

Parents should arrange for the correction of remediable defects of children during summer vacations. Not only do these months provide adequate time for the leisurely correction of defects, but the improved physical condition of the child and the infrequency of communicable diseases during this period (which naturally retard convalescence) serve to highlight the significance of vacation periods as an excellent time for removing unhealthful conditions.

The combination of rest, play, companionship, the sense of leisure that vacations ensure, a more invigorating diet, the benefit of the sun's rays, correction of physical defects, and the absence of illness—all contribute to the improved physical condition of children. The increased activity during the summer may account for limited gain in weight at this period, but the child forms the basis for observed and marked changes later during the months of October, November, and December.

Some children, however, gain in weight regularly each month throughout the year. These children doubtless continue to enjoy good physical and emotional health and come from homes where intelligent parental guidance encourages ideal habits of living.

Some Physical Comparisons between Children and Adults. A partial summary at this point, in comparing children with adults, may help to focus attention on some of the significant factors relating to growth and development. Anyone interested in the subject immediately observes the irregularity and complexity of growth, associated with inheritance, sex, age, social and economic factors, environmental conditions which favorably or unfavorably affect child behavior, health in terms of normal body functions, and many other conditions probably not now recognized.

The newborn child increases to twenty times his original size before he reaches complete adulthood, although his brain multiplies in area only four times during this period. By comparison, the child's face at birth is large and the trunk long, the arms and legs are short, and almost no neck connects the head and shoulders. The brain and eyes reach full growth at about ten years of age. The heart, spleen, and muscles mature at approximately twenty years of age. By the thirtieth birthday no further growth appears in the thyroid gland, pituitary gland, adrenal glands, lungs, liver, testes, or ovaries.

Other generalized comparisons deserve comment. The Eustachian tube of the child is straighter than that of his parent, which may ac-

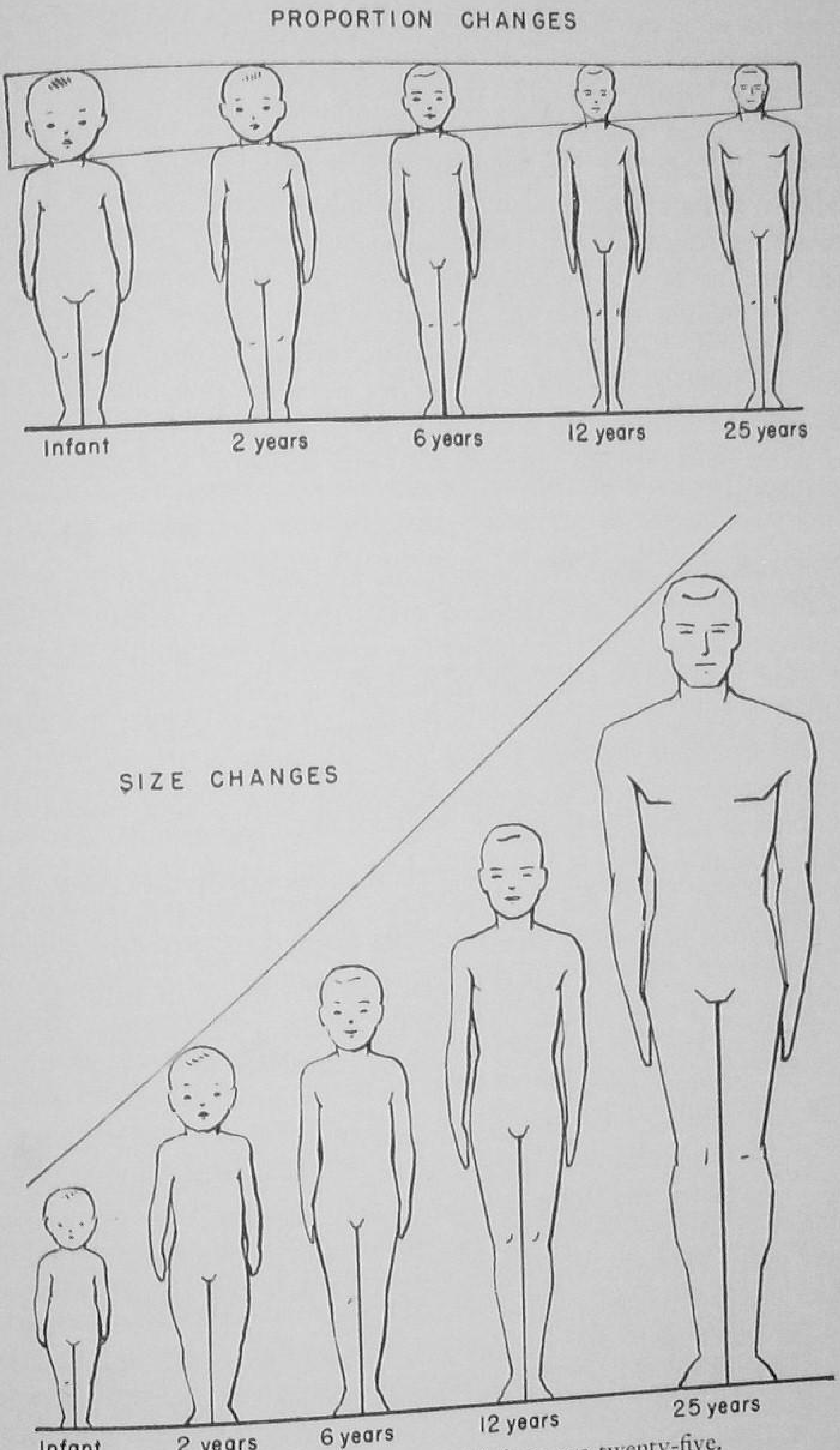

Fig. 5. Body changes from birth to age twenty-five.

count for more ear difficulties early in life. The lungs and digestive system keep pace with general development. The heart grows steadily and beats more rapidly to supply the growing body with oxygen and to distribute liquid nourishment to the various cells. This rapid circulation often makes children less sensitive to low temperatures than adults. Children require large amounts of carefully selected food for proper growth, increased activity, and normal functioning of the body. Children seem to have more lymphatic tissue than their elders. After the first few months of inherited protection from certain diseases, children have less resistance to illness than adults. Children have fewer red blood cells per unit of blood (but not less iron) than older persons. The soft and cartilaginous bones of children gradually become harder and more rigid through ossification to give strength and firmness to the skeleton.

Nutrition and Growth. Throughout the previous discussion the implications of nutrition have appeared many times. This section directs attention to some of the more salient features associated with good food and good food habits and their relationship to continuous growth in children. Adequate amounts of well-prepared food build new tissue and provide repair materials as well as heat and energy for the body. Health instruction from kindergarten through high school emphasizes these facts in numerous ways.

Nutritionists say that the growing child needs a daily diet consisting of a serving of meat, fish, poultry, eggs, dried peas or beans—twice daily; potatoes and other vegetables and fruits—twice daily; at least one serving of green or yellow vegetables; one quart of milk or its equivalent in dairy products; one serving of citrus fruit, tomatoes, or raw cabbage; and whole-wheat bread or cereals at each meal, with butter or fortified margarine.

The contributions of education, boards of health, and welfare agencies have stimulated an interest in and a demand for the essential foods. Vegetables and fruits are raised and purchased in increasing quantities as the general public eats them both cooked and in their natural state. This procedure counteracts in part the large and deleterious per-capita consumption of raw sugar.

On the other hand such factors as economic limitation, ignorance, and social negligence remain as nutritional problems in need of further investigation and solution. Foods in the same classification may not possess equal value as nutrients. Milk comes from the dairy in several grades depending upon the bacterial count per unit, the butterfat con-

tent, and the care necessary to produce it. Milk with a high butterfat content supplies more heat and energy value per unit of volume than milk with a lower content. Milk with a low bacterial count is safer and more expensive than inferior grades. Cereals, although a good source of protein, do not take the place of meat, fish, poultry, eggs, and dairy products as a means of building body tissues. Twice as much tomato juice must be taken as orange juice to secure the same number of vitamin units.

Food prices change with scarcity and demand. Thus liver, once used as a food for pets, has now become an expensive though necessary ingredient in the diets of growing children and of adults suffering from anemia. Milk has about doubled in price during the past decade, although this increase relates to the cost of production as well as to demand. The expense of raising and caring for milk-producing herds, and the safety precautions required to produce safe milk of uniform quality, largely account for the increased cost of this commodity to the consumer.

The deplorable practice of destroying or withholding certain food surpluses when the price does not guarantee a reasonable profit is a political and social disgrace in this country. It is a problem deserving immediate attention by enlightened government, with the person responsible branded as a criminal and forced to pay the penalty for his overt act.

Some of the best scientific research has been directed toward nutrition. The number of calories required for health has been computed by experts on the bases of age and weight. Although the quantities of food needed vary with individuals, these data are available in terms of proteins demanded for growth and repair, carbohydrates sufficient for body heat and energy and for physical activities, and vitamins and minerals essential to stimulate and facilitate body functioning and to prevent nutritional diseases.

Glands and Growth. The study of endocrinology gradually unfolds a series of mysteries associated with growth and development that suggests a more prominent place for this science in the years to come. Already scientific opinion accepts many evidences of truth concerning the relationship of properly functioning glands to sound physical health and personality, and new researches periodically disclose other supporting data.

The ductless glands stimulate growth and improve the functioning of other glands and certain organs. Secretions from these glands exert a

powerful influence on the development of physical characteristics and personality behavior. A list of those important to growth are the thymus gland, thyroid gland, hormone of the outer portion of the adrenal glands, hormones from the forward portion of the pituitary gland, pineal glands, and sex glands.

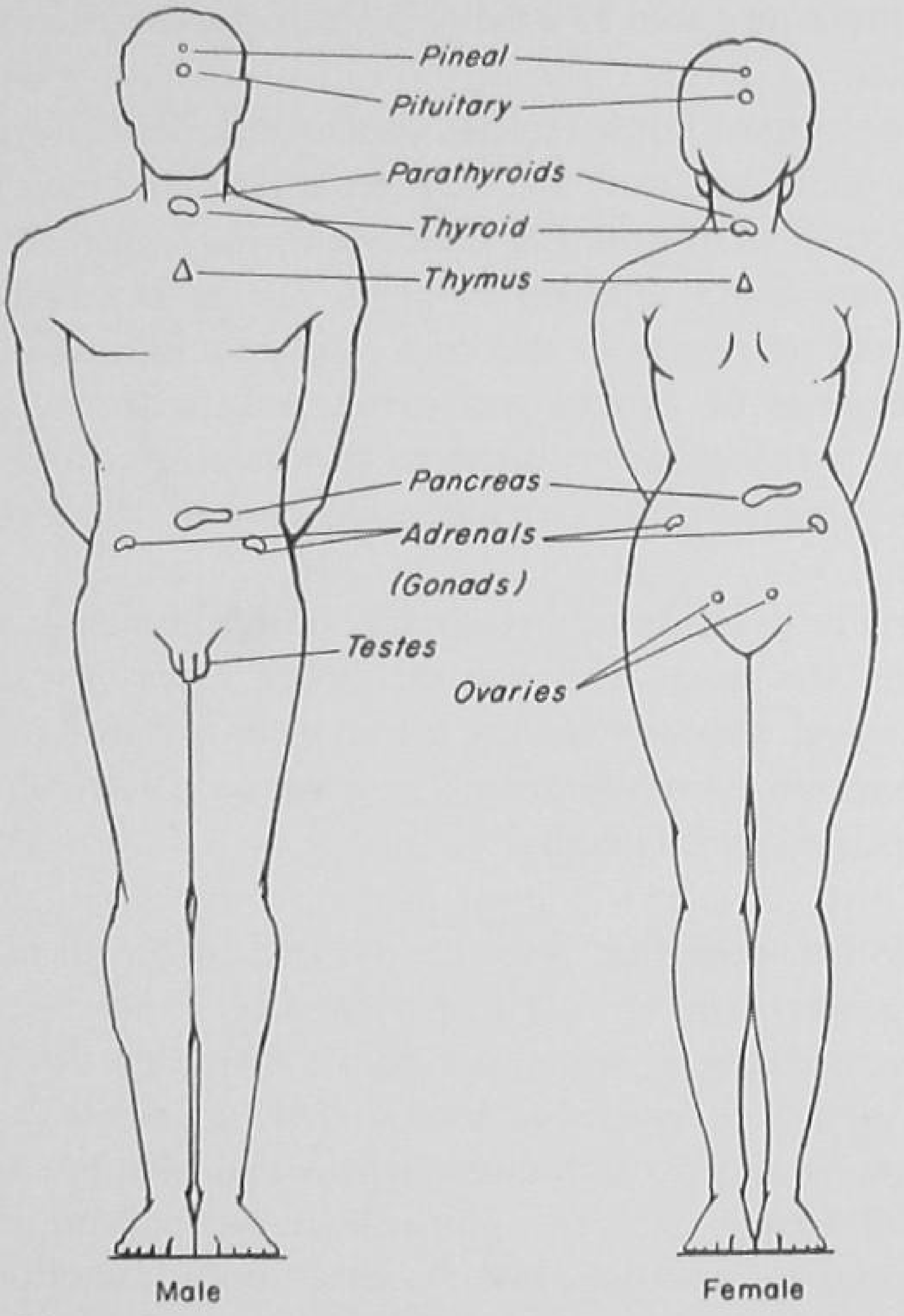

FIG. 6. Endocrine glands in both male and female.

The thymus, a rather large gland in the upper chest of the child, degenerates as the body matures. Its decrease in size and activity corresponds to rapid physical growth and the development of sex characteristics in adolescent boys and girls.

The thyroid gland may influence physical growth, mental and emotional development, and deposits of fat in the body tissues. Its chief function is the production and secretion of the iodine-containing thyroxin that helps to regulate basal metabolism. The gland is located at the base of the neck and has connecting lobes, one on either side of

the trachea. Children born with thyroid limitations show abnormal development, smallness of stature, and oftentimes mental deficiency. Decreased thyroid activity in adult life contributes to obesity and to a dulled mind and body. Excessive stimulation of the thyroid speeds up metabolism, keeps the body thin, and produces one type of goiter.

The two adrenal glands appear each to cap a kidney. Their special hormone is adrenalin, the stimulant of the autonomic nervous system. Hormones from the outer portion of this gland influence growth, affect the development of sex organs, and to a limited degree determine basal metabolism. Overactivity of these glands in women tends to emphasize masculine traits—the mannish build, the hairy chin, and rudiments of the mustache. Inactivity of the adrenals results in slowing down the oxidation processes and reducing muscular efficiency.

The pituitary gland is embedded in the base of the brain. It has two lobes and many separate hormones. The chief extract (pituitrin) increases the pulse and respiration rates, raises the blood pressure, affects the amount of urine secreted, and causes contraction of the involuntary muscles of the uterus, gall bladder, intestines, and bladder. The forward portion of the pituitary gland (anterior lobe) affects growth and accelerates thyroid and adrenal action. The pituitary gland is largely responsible for abnormal and nonsymmetrical growth—the giants, dwarfs, and gorilla types.

Little is known about the pineal glands, believed to produce an internal secretion, except that they are located in the head. Certain influences on growth and sex development may be attributed to them.

The internal secretions of the sex glands influence the characteristic development of the body and general growth in addition to the functioning and development of the sex organs and characteristics.

Other glands affect growth to a limited degree, either directly or indirectly. The pancreas does not directly affect growth except as its juices contribute to protein digestion in the duodenum, and the hormone (insulin) enables the tissues to utilize glucose. The parathyroid glands regulate calcium and phosphorus metabolism, essential to the development of the nervous and skeletal systems.

Sleep, Rest, and Growth. Most parents and teachers appreciate the values of rest and sleep as necessary adjuncts to healthful living. Although active children require more sleep and rest than sedentary adults, everybody needs frequent periods of wholesome relaxation and several hours of restful sleep each night. The fallacious belief that a person may store up large quantities of energy for extended physical

or mental activity without affecting his health or total efficiency is responsible for many of the physical and mental disorders in the home or school and accounts for numerous accidents in industry. A balanced life of hard work interspersed with rest and sleep produces the best results among persons of any age, except perhaps for the very young.

Healthy babies just can't stay awake. They sleep 20 or more hours each day. As they grow older and more wakeful, two naps—one in the morning and the other in the afternoon—supplement the 12 to 14 hours of sleep at night.

Older children require less sleep. The amount of rest needed at one time becomes more and more an individual matter. At least 8 to 10 hours of sleep daily are advisable for growing children of public-school age, although some boys and girls profit by additional amounts. Sleep before midnight usually proves more restful than after midnight or during the late morning hours. If possible, children should sleep alone and have a room of their own. The bed should have a firm and comfortable mattress, clean sheets, and sufficient blankets to keep the body warm. A flat pillow or none at all probably is most restful, although individual preferences differ in this matter. The room should be ventilated to permit a change of air and freedom from odors; assuming adequate ventilation, sleeping with the windows closed is no worse than sitting in a closed room.

Along with actual sleep the matter of rest deserves attention. Many of the fatigue products that accumulate during the normal processes of the day disappear with brief periods of rest or relaxation. This dispeller of fatigue may take many forms. The tired athlete sits on the bench for a few minutes and then returns to the contest. The student who has applied himself to his books for several hours may find respite in an active game that relieves the nervous tension. The busy housewife often seeks relaxation by visiting with friends, reading a book, or attending the theater. The harassed businessman spends an evening at his favorite club and returns home in a restful mood, able to enjoy a sound night's sleep.

The central element in each of these examples points to change, *i.e.*, substituting a different type of activity for the one responsible for fatigue. Thus fatigue engendered by physical strain suggests a quiet mental activity as an antidote, whereas nervous or emotional stress may be alleviated by an activity requiring vigorous muscular coordination of a rhythmical nature. In this sense, social dancing under wholesome conditions represents a form of recreation yet largely unexplored as a means of relieving the tensions of sedentary occupations. Social danc-

ing incorporates the combined factors of muscular activity, music, agreeable conversation, and pleasant surroundings.

In passing, it should be pointed out that success in rest or relaxation depends upon the acquirement of habits and skills in much the same manner that these attributes favor the efficient pursuit of any human experience. Successful athletes develop the habit and skill of relaxing momentarily just prior to "going all out" in the game or contest. Likewise the superior teacher doubtless has established the habit of seeking appropriate relaxation from the confining activities of the classroom and exhibits considerable skill in his chosen hobby or recreational activity.

Sleep and rest both have a distinct place in growth and development. The relationship of these elements to growth are emphasized in every home and school. Their significance in the process of normal development remains only partially realized, awaiting the day when parents and teachers assign to sleep and rest the importance they deserve in improving the lives of persons of all ages.

Disease, Accidents, and Growth. Disease, especially a prolonged illness or chronic condition, interrupts normal growth. The disease pattern may destroy body tissue, paralyze or retard certain functions, or render foods normally adequate insufficient to counteract the damage caused by the malady. With involvement of the digestive system especially, sufficient foods may not be assimilated to meet the body needs for new tissues and the repair of destroyed ones. Loss of appetite during illness often reduces the amount of food taken into the digestive tract. Certain diseases interfere with the circulation and thus prevent the removal of additional wastes that accumulate in the tissues as a result of body infection. Intravenous treatments and operative diets may cause temporary anemia.

The harmful effects of some diseases are well known. The toxins of diphtheria frequently affect the heart and kidneys. Scarlet fever may damage the special senses of sight and hearing. Certain types of infantile paralysis often result in loss of motion of the arms or legs or even involve the respiratory system. Measles may predispose the child to pneumonia or may impair vision.

Specific diseases and accidents account for the greatest number of deaths in certain age groups. Pneumonia, diphtheria, and accidents are responsible for many deaths among children between the ages of five and nine. Between the ages of ten and fourteen boys succumb to a

large number of accidents, whereas circulatory diseases cause the death of many girls. Pulmonary tuberculosis, accidents, and self-prescribed diets cause numerous deaths between fifteen and nineteen years of age.

Of the conditions fatal to children in their growing years, most could be avoided by adequate protective measures. Susceptibility to diphtheria may be measured by the Schick test, and the disease prevented in most cases by the use of toxoids during the first year of life and at later intervals as prescribed by competent medical advisers. Pulmonary tuberculosis may be discovered by frequent health examinations, which include the Mantoux test, and by X ray of the chest; cures usually follow early diagnosis and treatment. Efficient programs of safety education make school children aware of the dangers associated with everyday living, thus greatly reducing the number of injuries and deaths among the school-age group. Nutrition programs and instruction in health education emphasize the necessity of an adequate diet and stress the dangers of adopting a diet not prescribed by a qualified physician in order to gain or reduce weight. The common cold, infected tonsils, inadequate diet, and fatigue probably contribute to the incidence of pneumonia among school-age children.

Sex Differences. Certain characteristics of the boy and girl at different age levels show differences of growth and development peculiar to each sex. Young girls (at five years) express more adult behavior, take fewer naps, and like school better than boys. At six years, girls excel in reading, writing, and drawing, while boys are better in arithmetic and in listening to stories. At seven, girls enjoy the romantic "once-upon-a-time" stories, but boys have already found interest in tales of military adventure or airplanes. Girls often complain about their teachers, but boys seem to like them. Even at ten girls are more interested in marriage and sex information than boys of that age. They are more poised and careful of their clothes than are their brothers.

Girls seem to mature earlier than boys (boys remain in the period of adolescence about two years longer than girls) and to steal a march on their brothers in taking on the characteristic body changes of sex. The endocrine system functions sooner and metabolism is about 10 per cent lower in girls than in boys; girls, generally, have a lower death rate and a lesser susceptibility to disease than boys.[10]

Studies by McNemar and Terman show that about nine boys to six

[10] Ruth Strang, "An Introduction to Child Study," p. 630. New York: The Macmillan Company, 1938.

girls have an intelligence quotient above 140 or below 60; and that twice as many boys as girls exceed 160 or fall below 40.[11]

From the standpoint of education it is important to bear in mind that many of these apparent sex differences may represent artificial distinctions brought about by tradition and custom rather than by inherent differences existing between boys and girls. Although segregation of the sexes may prove beneficial in some of the educational opportunities afforded youth, numerous school functions serve best when applied to both groups.

Emotional Control. There are two extremes of emotional response: one upsetting and disturbing, the other soothing and pleasant. Even babies show both types of reactions. They scream, kick, hold their breath, or get red in the face when they want attention, or gurgle and coo with contentment when happy.

As the child grows older, the responses of fear and anger seem to form a definite part of behavior, although not always in the same pattern or to the same degree in different children. Fear of strangers often appears at about the age of five months, although fear of dark places may not occur until about the age of two. Except for these tendencies, most emotional responses are learned. Even these more natural responses may be controlled and in some cases almost entirely prevented by proper care and training.

Children acquire fear habits by association, imitation, or because of certain attitudes on the part of the child himself. Fear of a small woolly animal may result from a loud "boo" expressed by an embarrassed adult as he meets the baby for the first time and tries to give him a toy animal. A clap of thunder might go unnoticed if an older sister did not set a bad example by crying and clinging to the mother. Children take different attitudes toward situations, depending upon their mental reactions to experiences and to people. Situations that frighten one child may present no problem to another who is more mature, is in better physical condition, or has met these problems successfully on previous occasions.

Parents and adults responsible for a child's early training should try to avoid situations which thwart or frighten him by controlling the experience so that he responds pleasantly. This does not mean that the

11 Quinn McNemar and L. M. Terman, "Sex Differences in Variational Tendencies," *Genetic Psychology Monographs*, Vol. XVIII, No. 1 p. 57, February, 1936.

child must always get his own way; it does mean that his normal response should be a satisfactory one.

If the mother or teacher faces problems calmly and pleasantly, the child usually responds in the same way. Parents and teachers need to understand children and to know what responses represent approved conduct. The well-adjusted child does what is expected of him, provided the requirements are reasonable.

Children must have freedom to explore different situations under subtle guidance. If certain behavior and reactions of the child bring satisfaction, these responses will continue in similar experiences. The behavior may be socially unacceptable, but if the child gets what he wants or gains approval, he will be content and respond in the same way again. He must be helped to make the right responses. Each experience helps build the pattern of emotional maturity, and early emotional behavior definitely influences later reactions to learning situations that affect his ability to adjust to people and to problems. Adult happiness and success closely relate to patterns of emotional control learned much earlier in life.

As the child grows physically and develops mentally, he learns to control fear and anger and to react to conditions in light of their outcomes for him and for those about him. New experiences may contain confusing and complicated elements, but he relates previous learnings to the problem at hand.

Children must achieve recognition within their own group and find satisfaction in activities associated with the home and school. The thwarted, inhibited young child may become maladjusted and unhappy because of shyness or self-centeredness. With adolescence comes the added problem of physical changes and glandular stimulations. At this time the child may not get on well at home. The opinions of the family, and their aims and ambitions, may not coincide with impressions received at school or obtained from friends. Inability to decide between right and wrong and consequent indecision tend to have deleterious effects on the development of emotional control. The solution to these problems largely reveals the degree to which education of the emotions has proved successful. To a limited extent emotional development relates to inheritance, although environmental influences represent a more vital factor in determining the way an individual reacts to the complexities of modern life.

Early Childhood. The three sections immediately following summarize the normal and developmental traits of youth observed in early childhood, later childhood, and adolescence. These sections attempt to

focus attention on the essential features of development without the detail found in numerous texts that admirably cover the respective subjects.

Growth and physical development in early childhood follow a rather distinct pattern. The young child is constantly active, and developmental changes occur almost from day to day. His motor skill begins at about the age of three or four weeks when, lying on his stomach, he raises his head from the bed or table. He thrashes his arms and kicks his legs. At six months, he smiles, turns over and moves about the bed, sits upright, and tries to pull himself onto his feet. He can amuse himself with small toys if left alone. Progress depends upon the healthy development of his nervous and muscular systems. Changes are rapid. The first teeth appear any time after the sixth month. He walks at about one year of age and begins to say a few words. As he grows, body build follows the likeness set by the genes acquired from parents and their ancestors. He learns to manage his body and toys and develops the habits necessary for living in a house with other people. He becomes a noisy, active youngster, interesting and affectionate. Development of the body proceeds from the axis toward the extremities, thus physical activities involving the large trunk and arm muscles are learned before the child acquires skill in controlling the muscles of the hands and fingers.

The healthy child in elementary school is constantly curious, active, and eager to learn more complicated things. He learns to ride a tricycle, push a cart along the walk with his foot, skate, play games with balls, and many other useful things. He handles tools and pencils awkwardly and becomes easily distracted by happenings around him. He may have tantrums which require sympathetic and efficient guidance.

The personal habits of youth at this age need careful direction. Children usually have good appetites but are unpredictable about food. They take too large mouthfuls and exhibit poor table manners due to lack of control and to eagerness. The properly developed young child sleeps well and is usually ready for bed at about seven in the evening. The bath is unpopular. Children wash their hands fairly well but frequently wipe spots off their faces instead of using soap and water. At this age children easily acquire communicable diseases, especially measles and whooping cough. The need for attention to efficient health services becomes apparent at both home and school.

Later Childhood. As children grow older, they become more efficient and dependable. They desire the approval of their friends and usually learn to fit into the customs of family and community. They

acquire facility in working with others, although individualism manifests itself in their oblivion to criticism of their own creations. They begin to develop habits of study and appear eager to learn.

Children at this age need guidance in the fulfillment of their interests and development. They need help in learning to balance their physical and mental activities with rest and relaxation in order to achieve the fullest growth and development and as a means of encouraging habits and skills of use to them in meeting the problems of adolescence which lie ahead.

Motor activities assume an important role at this period, not only for physical development of the individual but also as having a significant bearing on social and emotional behavior. A majority of social contacts arise out of motor experiences in which the child either derives satisfaction or appears at a disadvantage owing to awkwardness or lack of skill. His emotional behavior is likewise conditioned by success or failure in motor and social accomplishments. Physical education of the right sort enjoys a unique opportunity in the complete education of youth throughout the elementary school period.

The Adolescent. Doubtless the principle of individual differences finds no fitter application than in dealing with the adolescent. Each youth presents a series of growth and developmental problems peculiar to himself. Some will be tall, others short; some strong, others weak; some able to adjust themselves easily to society, others experiencing difficulty in getting along at home or at school.[12] Some may have acne and feel conspicuous among friends. Some may face with anxiety the disturbing awareness of sex and view with misgivings the things taught them concerning the normal relationships between young men and young women.

Adolescents should be regarded as young adults. Their social problems become adjusted as they gain experience in dealing with them. The new emotional urges gradually come under control. As adolescents grow taller their bodies usually assume the proportions of well-built men and attractively formed women.

Young adolescents should associate with people who are physically like themselves. Later these youths will mingle with older people to

[12] Anna Espenschade, "Motor Performance in Adolescence Including the Study of Relationships with Measures of Physical Growth and Maturity," *Society for Research in Child Development Monograph*, Vol. V, No. 1, Serial No 24. pp. 17, 118-120. Washington: Society for Research in Child Development, National Research Council, 1940.

learn by example and imitation as well as by precept. Girls reach the early adolescent period slightly earlier than boys. Both sexes tend to seek companionship with young men and young women older than themselves. Freedom of opportunity to meet and accept responsibility helps in the normal development of youth at this crucial period. Understanding and sympathetic parents and teachers who appreciate the needs and urges of adolescents assist materially in the adjustment of these young adults to the complexities of modern civilization.

Quite obviously the pressing problems of a gainful occupation, marriage, parenthood, and citizenship, which bulk large in the normal interests of the adolescent, cannot be satisfied to best advantage by the academic curriculum that characterizes so many secondary schools and colleges. Recent attempts to redirect these curricula toward the solution of persistent problems associated with adolescence deserve sincere commendation.

Social Development. In terms of complete living, the home and school may not profitably ignore the importance of social development for children and young adults. Social development means the unfolding of potential capacities that enable the individual to get along happily and successfully with himself and others in the myriad of complex situations that characterize modern society.

By nature man is endowed with certain capacities for accepted societal behavior, but the development of these innate qualities remains largely the unique responsibility of the home and school. The young child begins early to show evidences of desiring companionship, and these evidences continue throughout the life span. Many of these natural tendencies need redirection or sublimation.

Babies learn early that to cry may bring someone running to them. Even before he can clearly see the world around him or identify anyone in particular, the child is aware of the adults who care for and feed him. Gradually he learns to lift his head and laugh when people talk to him. He is a social being; he likes having people around.

Social adjustments of the young child depend largely on personal mentality, opportunities provided for rich experiences, and the training he receives from parents and teachers. In nursery school the child learns to use words, to comprehend the meaning of ownership of toys and other objects, and to get along with other children. Illness often retards the social progress of the young child. In fact he is likely to be spoiled by the attention given him while ill. At best the behavior of any young child is unpredictable. Parents cannot tell for sure whether he

will be aggressive, naughty, or well-behaved, but they may be sure that the reactions, whatever they are, depend largely upon parental guidance.

Attendance at school affects social behavior. Almost at once the child learns that personal happiness relates to getting along with other children in the group. At school he learns many skills and gradually becomes interested in other children. He learns certain desirable health habits, such as using his own towel and washing his hands after going to the toilet. He learns to wait for the policeman's signal to cross the street and to adjust to strange children and adults without fear. Influence of the teacher's guidance and personality are important to the child's social development at this time.

During the early years of school especially the child dislikes being made fun of, craves approval, and must have faith in his security. Perhaps his fears and experiences with the group are responsible for his sudden ability to sit still in class, to share materials and equipment, to keep rules, and to refrain from laughing when friends make mistakes. Children begin to be impressed by what the teacher says rather than by the opinions of the family. They imitate adults whom they admire and become conscious of their own sex. The spirit of competition develops and loyalties to the group become strong. Motor development at this period serves unique purposes in gaining social approval. The child efficient in motor skills does not face the obstacles and threats imposed by classmates abler than himself at a time when physical activities constitute a major interest during waking hours.[13] For this reason, physical education of the right type and proper amount represents a significant factor in the social development of children and young adults.

Progress in social development is marked by rapid change and the ability of the child to conform to accepted patterns of behavior. This progress is influenced largely by the competence of parents and teachers in understanding and guiding the child toward acceptance of approved social customs without arousing antagonisms or unduly thwarting individual initiative.

Satisfactory adjustment and social maturity remain incomplete even at adolescence. With the added burden of self-consciousness and awkwardness that youth experiences at this time conflicts often arise with parents and teachers concerning the best way to meet certain vital problems. These problems, in a way, are peculiar to each generation, and adults cannot fully understand the complete implications of social

[13] Jersild and Associates, *op. cit.*, p. 23.

progress; adults have formed the patterns of their lives by different rules, and were influenced by a different set of values.

The adolescent wants desperately to enjoy companionship and to be of service. Through good companionship and sound education the youth has an opportunity to plan and to develop into the kind of person his idealism directs.

School Responsibility. Except for the home, perhaps no other agency so vitally affects the growth and development of children and young adults as do the schools and colleges. At least the opportunity rests with educational institutions to guide and direct the welfare of youth toward a kind of productive citizenship which results in personal happiness and satisfaction and which gives to society young men and women imbued with the spirit and trained in the skills of competent leadership.

All school activities and experiences contain elements rich in potential value for wholesome growth and development. The fact remains, however, that a broad and effective program of health education doubtless could affect the vital aspects of complete living to a degree unparalleled by other subjects or programs. A partial list of objectives for such a health-education program follows: (1) periodic health examinations by medical doctors, dentists, and psychiatrists; (2) complete and progressive health records of each pupil; (3) the family and the family physician acquainted with the findings of school-health examinations; (4) correction of remediable defects disclosed by the school-health examinations through consultations with parents; (5) correction of remediable defects through boards of health or welfare agencies when financial responsibility cannot be assumed by the home; (6) immunization and protection against certain diseases; (7) inculcation of the ideal that health is desirable and obtainable; (8) instruction in the essentials of anatomy and physiology given in such a manner that the student knows the structure and function of the body as a whole and the care necessary to promote growth and development; (9) instruction concerning the various conditions of the community, state, and nation which affect health; (10) a school environment conducive to healthful and safe living; (11) school personnel interested in youth, and who understand the inheritance and conditions of environment which limit and favor growth and development; (12) special classes for the handicapped, when necessary, to provide an adequate education for the underprivileged so that they may become self-supporting, and make the best possible adjustment to their environment; (13) an adequately staffed physical-education department to teach skills and encourage

participation in recreational activities within the limits of physical ability; and (14) cooperation with out-of-school agencies which may contribute to the broad program of health education sponsored by the school or college.

Summary

The information contained in the following outline represents an excellent summary for this chapter.[14] The outline divides the first 21 years of life into six segments: (1) birth to one year, (2) one to four years, (3) four to six years, (4) six to fourteen years, (5) fourteen to eighteen years, and (6) eighteen to twenty-one years. Within each of these age periods appear the salient features of characteristic behavior associated with physical growth, development of the senses and emotions, habit formation, educational interests and needs, and sociability and play traits.

The teacher or parent who becomes familiar with the essential features of this outline and who uses these precepts in studying and analyzing the individual needs and interests of youth will have gone a long way to justify himself as a professional educator or for professional parenthood.

Child Development Outline[15]

Birth to One Year

Physical

At Birth. About 7 pounds, height 20 to 21 inches. Pink color, squirms, wriggles, pulls up legs, stretches them out, clenches fists, puckers face, cries lustily. Sucks and swallows. Sleeps about 22 hours a day.

By First Month. Loses a little weight shortly after birth, but regains birth weight by tenth day. Hand to mouth. Lifts head when on stomach. Pushes with feet against bed, etc. Sheds tears. May be slightly cross-eyed.

By Fourth Month. Weight nearly doubled. Grown 2½ to 3½ inches. Head grown about 2 inches in circumference. Opposes thumb to finger. Holds rattle; shakes and finds rattle without looking at it. Sight of object stimulates some activity. Turns head toward and away from things. Impulse to sit up; some trunk movement control, but allows back to slump. Eye movements perfect. Head held up without support. Sleeps 2 hours at a time, 16 out of 24.

By Eighth Month. About 16 to 19 pounds. Measures 25 to 27 inches. Reaches for, takes up, examines objects. Index finger separated in use. Good

[14] Prepared by and used with the permission of the Connecticut State Department of Health.

[15] Data from Child Development Chart, prepared by and used with the permission of the Connecticut State Department of Health.

CHILD DEVELOPMENT OUTLINE (*Continued*)

eye-hand coordination. Learns shapes, sizes, textures by handling. Seizes and carries objects to mouth. Alternates foot movements. Sits up alone. Raises and drops arms with pleasure. Probably begins to creep. Has one or two teeth. Weaning begun, and child learns to eat solid food. Sleeps 10 hours without food, 16 out of 24.

End of Year. Weighs about 21 pounds. Measures 27 to 28 inches. Stands without support. Turns over when laid face down. First attempts at walking. Pushes chair. Has six teeth. Four regular feedings in 24 hours. No sweets. Sleeps all night and naps in daytime, 14 in 24 hours. Should be immunized against diphtheria and vaccinated against smallpox now.

Senses and Emotion

At Birth. Reacts to loud noises; may be completely deaf. Eyes follow light. First air hitting lungs forces cry. Reacts to touch and taste.

By First Month. Facial reactions suggest pleasure. Smiles. Taste, smell, touch, sight, and hearing active. Focuses on moving objects.

By Fourth Month. Recognizes human voices and turns head. Pleased with music and human faces. Laughs at tickling. Cries with joy at sight of mother or father. Distant sounds heard. Clear vision at 4 feet; blinks and stares. Looks at hands, interested at rubbing. Explores with tongue and lips.

By Eighth Month. Discriminates strangers. Afraid of strange animals (dogs, etc.).

By End of Year. Not much conception of space, although he has some idea of near and far distances.

Habits

At Birth. Has no habits, but immediately begins to form them.

By First Month. Regularity is important; hunger satisfied at certain times. Learns that he must go to sleep when put to bed and that crying does not result in being picked up or played with.

By Fourth Month. Sleeping habits are established. Sleeps alone without rocking, walking, bottle, singing, light, etc. Learning to control bowels.

By Eighth Month. Bowels practically controlled (adult's responsibility), stool regular each morning.

By End of Year. Begins to learn bladder control.

Education

At Birth. The general appearance and reaction of the baby gives some indication of inherited intelligence.

By First Month. Makes vowel sounds. Conscious of solitude and society. Intent and meaning both lacking.

By Fourth Month. Recognizes members of family. Notices strangers. Says "coo" and later "da-da" for pleasure and "ma-ma" for hunger. Knows sound of watch. Listens with attention. Pleased at seeing self in mirror. Begins to imitate. Enjoys being talked to and sung to.

CHILD DEVELOPMENT OUTLINE (*Continued*)

By Eighth Month. Voice is more modulated. Understands questions before can speak. Feels hands, face, and hair. Finds feet; discovers that they are a part of himself. Recognition of absent members of the family if they have not been away too long. Definite recognition of strangers. Some movements are imitated. Intent by pointing with hand or finger. Babble stage, sixty-four different sounds. Pronounces consonant L and K. Curiosity apparent. Amuses self.

By End of Year. Whispering begins. Obeys command, "Give me your hand," "Don't touch." May begin to form definite words with meaning.

Sociability and Play

At Birth. Not interested in other people or in objects.

By End of Third Month. Enjoys having people around and enjoys limited play with mother. Begins to play with spools, strings, or buttons, rattles, strings of beads, celluloid and rubber rings, small animals of rubber and celluloid.

By End of Fourth Month. Enjoys the presence of other people. Is content with little attention. Does not participate with group. Enjoys a brief play period with mother or father. Especially interested in glittering objects, small lids and covers, cup and spoon, clothespins, rattle, a ball with small pebbles inside, sheets of clean, crisp paper, and floating toys for bath.

By End of Eighth Month. Cooperative play. Needs opportunity for expressing affection. Learns not to fear strangers but needs encouragement and reassurance. Likes toys that make a noise, enjoys crumpling and tearing paper, pulling hair, ringing bell, various kitchen utensils, potato masher, hard fruits and vegetables, such as oranges and gourds; plays with soft ball, light wooden blocks, dolls, toy animals.

By End of Year. Can play contentedly alone, but enjoys association of others his own age. Curiosity and imitation in play developing. Uses set of pans or boxes which fit inside each other; jars and bottles with removable lids to take off and put on; a handful of old picture postcards; a basketful of small objects to be taken out and put back; a nest of hollow blocks; a book with pages to turn, or any kind of manipulative toy.

One to Four Years

Physical

During This Period. Gains from 3 to 5 pounds and grows about 4 inches each year. Needs regular attention by a dentist. The last of the first set of teeth come in at this time.

Walks; at first frequently tumbles and stumbles. Draws and pushes large objects. Carries small chair. First runs on toes and then runs steadily. Climbs. Goes up and downstairs alone. Needs opportunity to push, pull, and swing. Skips with two feet. Throws ball without determining direction. Feeds self

CHILD DEVELOPMENT OUTLINE (*Continued*)

with some spilling at first, later on with very little. First holds cup with one hand, then with two. Carries a plate of bread or small pitcher of water without spilling.

Learns to pull clothes on and off but cannot button or unbutton.

Sleeps from 10 to 12 hours at night and has a 2-hour nap during the day.

Senses and Emotion

By End of This Period. Distinguishes color and able to match and name a few; begins to discriminate sounds; recognizes differences in size. Better sense of balance. Distinct sense of rhythm. Learns solidity and roughness. Sense of smell definite in second year. Is beginning to be interested in piano playing and soft singing. Love and courage appear in this period. Definite respect for parents. Care has to be taken or fear becomes founded in this period.

Habits

By End of Second Year. He feeds himself; uses cup and spoon. Has control of bowels and bladder, a dry bed at night. Pulls off his own shoes and stockings.

By End of Third Year. He eats his entire meal without help and tries to dress himself, wash himself, and brush his teeth. Asks for the toilet.

By End of Fourth Year. Behaves himself at the table. Waits on himself at the table. Dresses himself and laces his shoes; combs his hair. Puts away his toys without being reminded and executes other imitative movements. Habits of punctuality and orderliness well established. Learns by example to say "please" and "thank you." Beginning to learn to obey general commands.

Education

By End of Second Year. Obeys simple commands. Begins to use past experiences to solve present problems. Has a good memory of absent members of the family. Can recall an experience by seeing a place where something formerly occurred and needs to tell his experience. Recognizes objects and pictures. Imitates words when most of the syllables are similar but not when the entire word is new. Associates words and objects. Has a vocabulary of from four to eight words. Uses words that sound like action such as "choo-choo" and "bow-wow." Makes sounds and sentences, but they do not make sense. Imitates behavior and manner of the people he sees about him. Makes marks with a pencil.

By End of Third Year. Has from 50 to 100 words in vocabulary. Connects sounds and meanings. This is a period of action rather that speech development. A word may have several meanings. Executes simple orders with surprising accuracy. Increased ability to resist distraction; 20 to 30 minutes is a good attention span, but, if very much interested, may play an hour at the same thing.

CHILD DEVELOPMENT OUTLINE (*Continued*)

By End of Fourth Year. Can draw an irregular circle. Has a vocabulary of 116 to 1,000 words. He begins to use pronouns, makes sentences of double words, and asks questions. "Why" is often used. Can name three objects in a picture, tell a simple story, distinguishes "in," "under," and "behind." Can count from one to ten. Incidents appear to have significance. Past and future gradually differentiated, though tomorrow to a child is like 6 months to an adult.

Sociability and Play

During Second Year. Amuses himself alone with toys. Social conversation is rare. Does not like to play with other children; is interested in them but likes to play where they are and will challenge them if they do not pay attention to him. Needs companionship of other children. Toy replicas of household articles, chair, broom and dustpan, box to climb on, plank raised at one end or both ends to walk on, toy trains or autos, blackboards, pencil and slate, crayons, picture scrapbooks, blocks or leftover lumber, toys representing things that he encounters in real life. Wants many opportunities to do things for himself; works with clothing, etc.; does much lifting and balancing.

By End of Third Year. His play is a part of the group but not with it. If he has regular playmates, he soon learns to play well with other children. Needs regular supervised play. Can operate a kiddie-kar around a chair. Such a toy is much better with pedals than without. Plays simple catch with ball. Enjoys handling objects and thrills with new achievement. Needs something new to explore very often.

Four to Six Years

Physical

During This Period. Four to 6 pounds gained each year. Grows about 2 inches a year. At the end of this period the 6-year molars, the first of the permanent teeth, appear. Many children of this age need to have adenoids and tonsils removed. The child tries to lift quite heavy articles and needs plenty of room for exercise. Skips well.

By Sixth Year. Can ride a bicycle. The eye movements necessary for reading develop. Sleeps 12 hours at night and has a rest period of 1 or 2 hours after noon meal.

Senses and Emotion

By End of This Period. Surprising sense of rhythm. Ability to balance self well learned at this time.

Sense of touch, and perception of form and similarity becomes better defined. Sees difference in length of lines. Knows difference in weight.

Begins to be self-critical. Love of self begins to shift to love for others of the same sex.

CHILD DEVELOPMENT OUTLINE (*Continued*)

Habits

By End of This Period. Purity of speech is developed in this period. Regular practice in telling the truth; is able to distinguish between imagination and truth. Learns obedience to command "come here" and "go there," "wait," and all other similar commands, but learns to appreciate "please" and "thank you" when they are added to the request. Learns to do various things for himself and those things which receive the approbation of others. Curiosity needs stimulation. Learns to understand property rights and generosity.

Education

During This Period. The influence of dialect appears. Numbers and counts four objects serially. Knows own age and birthday. Knows morning from evening. Exchanges ideas with adults. Interested in solving puzzles. Anxious to read. Can understand symbols. Knows right from left hand. Recognizes coins. Knows addresses. Capable of sustained effort; is able to follow three successive directions given verbally at the same time. Begins subordination in sentence formation, brings clauses into logical connection, tells a rather elaborate story, and by the end of this period has almost an adult vocabulary. Recounts experiences with great accuracy of detail and repeats five to six word sentences. This is the kindergarten stage, and much good can be done by enrolling the child in the kindergarten and Sunday school, as he needs the stimulus of new environments and association with other children of his own age and mental growth. Learns more from other children than from adults. Rhythm makes a strong appeal; and learns to sing simple songs. By the end of this period knows the days of the week, can tell time. Interested in animal study; makes picture books and colors with paint and crayon. Likes to work with plastic material. Learns the names of common birds, trees, and insects.

Sociability and Play

During This Period. Real group play begins. Forms intimate friends of own sex. Likes to go to school. Likes to carry out his own ideas and is best not interfered with if he does not bully the crowd. Supervision of companionship is necessary. Plays "house," "store," "railroad," etc. Needs alternate strenuous play with rest. Overactivity causes child to be tired and quarrelsome. Learns to respect elders. Gets a great deal of pleasure from being assigned some definite task at home. During this period enjoys painting and has a good appreciation of design. Draws objects which can be recognized. Begins to use a saw and other tools. Uses scissors and follows a pencil line roughly. The boy makes complicated play huts, etc., while the girl makes things as the mother does, such as dresses, etc. Pets mean much to the child in these years.

CHILD DEVELOPMENT OUTLINE (*Continued*)

Six to Fourteen Years

Physical

Gains about 6 to 10 pounds a year during this period and grows an average of 2 inches a year. During the end of this period there is an increased rapidity of growth in both weight and height. Outdoor exercise is of great importance, but there is necessity of guarding against overstrain of the heart and muscles. Action is still more dependent on the large muscles than on the small ones, and fine accurate work is still not to be expected. Needs such general exercise as swimming, rowing, gymnastic apparatus, roller skating, walking. The permanent teeth come in during this period and are nearly all in by the time the child is fourteen. Care of the teeth is of great necessity. Needs a balanced diet. Eleven hours of sleep during the night and a short rest during the day. Puberty or sexual maturity becomes evident. This is shown in the boy by a growth of hair on the body and face, a change of voice, and some alterations in the size of the genitals. In the girl menstruation and an appearance of fat on various parts of the body, enlargement of the breasts, and growth of auxiliary hair. Needs 10 to 12 hours' sleep.

Senses and Emotion

Sensitivity to pain decreases. Girls are more sensitive to pain than boys, and this becomes more marked as the children get older. Perception of small difference in weight becomes more accurate during this period, and more so in boys than in girls. Acuteness of touch decreases. There is a rapid increase in the perception of pitch and tone. Power of sustained attention definitely increases. Does most of his fighting in this period. Learns aggressiveness and persistence and has few fears of his environment, but there is great danger in this period of developing morbid fears and obsessions which may affect the child's whole future life. Toward the end of this stage love for individuals of the same sex begins to shift to love and attention directed to the opposite sex.

Habits

Develops sense of humor. Politeness shown in play. Needs regular home duties. Can manage a small allowance, keep accounts, and care for personal possessions. Learns perseverance, concentration, how to study, observation, self-reliance, and self-control. Disciplines impulses and controls emotions. Learns by example to be neat and clean in appearance, fingernails clean, shoes shined, hair brushed, etc.

Education

This period is usually spent in the grade school, *i.e.*, from the first to the eighth grade. The first systematic instruction in academic knowledge. En-

CHILD DEVELOPMENT OUTLINE (*Continued*)

joys using his imagination and memorizes easily. Learns to handle, measure, compare, copy, and use picture maps. Homework is a great task. This is the best period for training in music and typewriting. Manual training, carpentry, and domestic sciences are enjoyed. Elementary study of foreign languages should be begun.

Learns to understand and practice style in dressing.

Sociability and Play

Outdoor amusement is of greatest importance in this period, although as yet directed athletics are still not especially enjoyed. Play becomes very important. This period is spent mostly with others of the same age and sex, and the child is rather antagonistic to those of the opposite sex. Strong attachments are apt to develop for the same sex at this period, and unless the child is given the right information there is likely to be some sex play during these years, which may cause considerable conflict. The child needs, therefore, to be made aware of the facts of the sex development before this period, and his questions frankly answered. The child is likely to lose interest in home unless it is as interesting as the outside environment. He enjoys decorating and fixing up his own room and entertaining his playmates there. The child learns to have heroes by reading of hero tales and biographies. Admires his teachers, parents, and other adults. Sunday school and churchgoing is an important thing at this time. Parental cooperation is important as the child is ready to observe any conflict between the parents, as a result of which he affixes himself to one or the other and reacts as they do. Enjoys guessing games. Tries to make houses out of lumber and other material. Likes to collect flowers, insects, and other articles. Enjoys singing, dancing, simple, active folk games, charades, and games which give him opportunity to use his own ingenuity rather than follow direction of others.

Fourteen to Eighteen Years

Physical

This period is a most graphic one for the child, as there is a great change in his general physique. He gains from 1 to 4 pounds and grows from 1 to 3 inches each year. His head attains adult size. Changes are noticeable in the shape of the face, and the lower jaw becomes more prominent. The chest widens, deepens, and becomes longer. The size and structure of the bones become definitely matured. The pelvis becomes broader in relation to its length, especially in the girl. The general figure is rounded out by the development of the muscles and the addition of fat. The reproductive organs develop rapidly and become functionally mature. Menstruation is definitely established in the girl, and the boy is troubled more or less periodically by

CHILD DEVELOPMENT OUTLINE (*Continued*)

an overflow from the seminal vesicles. The child needs about 10 hours of sleep out of 24.

Senses and Emotion

Sensitivity to pain decreases. Period of sustained attention increases. Greater ability to divide the attention between two or more activities. Tendency to turn attention inward upon himself, his feelings, and impulses. Desires greater individual freedom and initiative, thus needs to be thrown more on own resources, but appreciates sympathetic, firm, just, and rational advice. If forced to submit, spirit is likely broken. Learns own capacity best by attempting things upon his own initiative rather than under external pressure. Achievement gives greater satisfaction. Conflict over religious beliefs common, but church can be of profound influence as adolescents are naturally religious and devout. Likely to be in conflict over sex and sex development. Lust becomes very apparent and is a normal accompaniment of adolescent development. Love in its physical sense becomes evident. School seems hard and unjust. Easily made ashamed and has a general feeling of being misunderstood. Vanity develops and is accompanied by sensitiveness. Definitely self-critical. Asks questions which lead to generalizations concerning God and sex. These need frank and understandable answers. Especially interested in the origin of life. Learns cheerfulness and truth, primarily from example. Carries respect for parents over to trust in the supernatural.

Habits

Habits well developed by this period are truthfulness, unselfishness, kindness, courtesy; habits of orderly conduct; habits of fair dealing and cooperation, thriftiness, industry, and independence. The child also has learned to respect authority and the rights of others and to carry a measure of responsibility.

He learns attention to the present task, to face reality frankly without undue emotional stress, and to express thankfulness in prayer.

Education

This is the high-school period. There is no great increase in mental growth, as, in most cases, the maximum of mental growth is reached early in this period. Although mental growth ceases about fifteen, on the average, the child continues to acquire general knowledge, distinct development of reason, memory, judgment, and attention. Ability to memorize increases. Reading is substituted for storytelling. Reads stories of science, invention, achievement, and adventure. Enjoys visits to industries. Mechanical skill well developed. Likes to earn money, and capable of handling own allowance. Begins to enjoy the classics, and develops a literary taste. Needs to learn the complete anatomy and physiology of sex. General planning for life work is of great importance.

CHILD DEVELOPMENT OUTLINE (*Continued*)

Sociability and Play

Becomes more sociable. Begins to take a definite interest in oposite sex. Mixed dramatic presentations are of value. Needs privilege of inviting companions to the home. Enjoys the development of social life in the church and takes a keen interest in social affairs. Likes to be treated as a grownup and appreciates frequent confidential talks with people. Enjoys leadership and an opportunity to develop this ability. Boys and girls enjoy playing wholesome games together, but there is a distinct difference in the physical abilities of the two sexes. Therefore, general physical games should be indulged in separately. Afternoon parties are only of interest to the child in the early part of this period. More interested in evening parties and grown-up functions. If too much emphasis is not placed on instruction, the child will develop definite interest in etiquette and taste in dress. Learns to respect law and to have a trustworthiness in the handling of money and in promises to others.

Eighteen to Twenty-one Years

Physical

This might be considered the final period of childhood, although in the true sense it is the first period of adult life. This period is included in the chart primarily because it represents the final stage in systematic education, as it is usually in this period that we find most of our college students. Most individuals have gained their full height and physical development at the beginning of this period, although some may show about 1 inch growth in height each year until they are twenty-one and gain from 1 to 4 pounds. The most marked development in this period is on the side of sex differentiation. Boys become distinctly men, and girls become distinctly women, in every sense of the word. The voice becomes stabilized, the features are well formed, the bodily hair assumes its adult growth, as does also the muscular system. The general hygiene of this period is the same as for any adult person, and the individual should remember to be temperate in all things. Seven to 8 hours of sleep are needed in every 24.

Senses and Emotion

The general sensory system also becomes mature. The girl is likely to have a finer development of her emotional nature, while the boy becomes more stable and more easily able to bear pain and disappointment. Emotional upsets are quite common in this period unless the individual has learned to control his emotions. If the person has developed finally as shown in the above, he should be able to control his emotions of fear and lust. At this time the person should be able to control his outward expression of his emotional feeling, so that emotion-evoking situations tend to be less exciting. It is necessary for the individual to find socially acceptable activi-

CHILD DEVELOPMENT OUTLINE (*Continued*)

ties as substitutes for emotional expressions. Therefore ample opportunity is needed for membership in clubs, dramatic societies, and all young people's organizations. These outlets for the emotions give zest to life and add important qualities to the personality. Thus the person becomes emotionally mature.

Habits

Personal habits are pretty well formed at this period although they may have to be slightly relearned in order to allow the person to properly adjust to his adult environment. Thus the boy in college may find that some of his infant habits are not acceptable to his schoolmates or fraternity brothers. Or, should he marry, he may find that some habits have to be modified if a proper adjustment is to be made in this association. There are practically no specific habits common to this period, except those that are acceptable to any adult person. One habit rather specific to this period, however, is known as argumentativeness. Since the person is attempting to express himself as an adult individual, he is likely to be very determined in his own opinion. This is of value if not overdone.

Education

In most cases the intellectual development is completed by this period, although the acquired knowledge is vastly increased through experience and study. From reading and attendance at lectures the vocabulary is much enlarged. His sense of maturity can be helped by exercising his own judgment in buying clothes and other articles.

Helping to work out the family budget, learning to be thorough and persistent in tasks prepares for the responsibilities of adult life. Definite determination of a vocation needs to be made early in this period.

Sociability and Play

This is a period in which the individual definitely determines upon building up a home life and taking a partner, which is of paramount importance at this period and gives the normally developed persons great concern. The boy and the girl needs confidential friends and advisors, both in vocational guidance and the matter of marriage. The child wishes to ask for advice rather than to be given it. The youth needs some protection from ridicule as he is attempting to perfect himself in the social amenities and conversation. He needs encouragement along civic and altruistic lines; the proper information about marriage and its responsibilities should be given in this period and should not be left until after marriage has been fulfilled. All college athletics are of value. Physical exercises—swimming and skill in a variety of games—are to be desired. Girls need less strenuous games, such as basketball, tennis, and dancing, while boys like football, basketball, and baseball. It is very important that the youth should learn some recreation at this period that can be used later.

Questions and Problems for Discussion

1. Explain briefly the contributions to the study of growth and development of anatomy, physiology, and sociology. In what way do these sciences relate precisely to the terms "nature" and "nurture"?

2. What do the terms "normal," "abnormal," and "individual differences" mean to you as applied to growth and development?

3. Define the specific terms "growth" and "development"; then prepare similar definitions for "interests" and "needs." From these definitions develop a principle of health education applicable for use by all teachers.

4. Explain briefly the significance of heredity, nationality, and geography to growth and development. In the years ahead will these influences increase, decrease, or remain about the same? What factors or forces help you to arrive at your decision?

5. What factors favorably influence intelligence? Oppose? What are the relationships between physical defects and intelligence? Establish an educational principle about these relationships. How may prenatal and early child care vitally affect intelligence?

6. Explain the uses of height-weight-age tables as measures of growth and development. What cautions should teachers observe in the use of such tables as a measurement of growth? What related values have these tables? Describe the attempts to evaluate physical condition and predict normal weight by the respective measures of subcutaneous tissue and body build.

7. What factors are implied in the precept, "Educate the whole child"? In what way does it involve developing all traits to an accepted minimum and then placing specific emphasis on the potentialities peculiar to a given individual? What changes in contemporary school organization and conduct might yield beneficial results in this direction? In what ways is health education particularly concerned?

8. Explain the physiological and psychological elements associated with sleep and rest. Describe the factors conducive to restful sleep. Discuss and evaluate some of the methods employed by adults to get to sleep. In your opinion, have the values of recreation for relaxation been properly explored? What suggestions have you for teachers and recreation leaders about this matter?

9. The section on Emotional Control contains a number of suggestions relating to habit formation of value to the teacher or parent of younger children and worthy of attention by older persons who must assume the responsibility for their own acts. Make a list of experiences that normally confront persons at different stages of growth and development and suggest appropriate ways of meeting these problems if you were the teacher or parent, or the person who must apply the decision to himself. If possible, use actual examples. Formulate a principle, or several principles, for use in teaching or learning emotional control.

10. Since physical activity exercises such a profound influence on the

physical, emotional, and social growth and development of children and young adults in schools and colleges, greater attention might well be given to physical education of the right sort in educational institutions. From your knowledge and experience, outline the essential elements of a physical-education program for (*a*) elementary schools, (*b*) secondary schools, and (*c*) colleges. Keep in mind the objectives sought, the activities offered, the type of person giving the instruction, the equipment, facilities, and time required, and the techniques of evaluating achievement.

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CHAPTER 4

THE ORGANIZATION OF RESOURCES FOR HEALTH

Variety of Health Agencies. Perhaps more than any other activity associated with the social welfare of a community, health enjoys the support of a vast number of agencies designed to protect the lives of people. Usually these organizations operate harmoniously with each other to promote the general welfare. Occasionally professional jealousies creep in when one organization appears to receive the lion's share of public acclaim or when an agency attempts to usurp unto itself prerogatives normally belonging to another group.

Opinion seems divided as to whether too few or too many health organizations grace the American scene. Certainly each one of them began with genuine ideals, aiming to fulfill a worthy community need. Once started, an organization's benefactors frequently have extended the original program, and these extensions oftentimes encroach upon the programs of other groups. Some persons flatly denounce this overlapping of function and contend that fewer organizations, with more clearly defined purposes for each, would better serve the average American community. It is generally agreed that communities should take steps to coordinate their numerous health agencies in accordance with an established master plan directed toward fulfilling the health needs of all the people.

For convenience one might classify all health activities as belonging to one or more of the following groups: official organizations, voluntary organizations, private agencies, and professional associations. Most of these groups operate on a national, state, and local basis. To further clarify the issues, the definitions that follow attempt to indicate the general functions normally assumed by each of these organizations.

Official Organizations. An official organization is one established by legislative enactment and supported primarily by public tax funds. Examples of official agencies include health departments, boards of

education, police departments, welfare departments, park departments, and others.

The general functions of official agencies are (1) to serve all duly qualified residents of the political or geographical area who may wish to avail themselves of the services provided, or who are compelled by statute or regulation to conform to established practices, and (2) to provide such services in the most economical manner consistent with efficiency and as determined by Federal, state, and local standards.

By the nature of government, departments are mutually exclusive; hence a power or responsibility delegated to one department may not be redelegated to another. This provision tends to prevent overlapping of function, duplication of effort, and other problems which often arise in the absence of an over-all plan. Departments of government would seem to constitute an efficient and economical means of handling public affairs, and for the most part this is true. Most of these departments, however, were established many years ago to conform to a social pattern much less complex than that of the present.

Complications may arise when a new activity confronts the governing body of a state or community. A few years ago, for example, controversy arose over the legal allocation of school-health examinations. Should the board of health or board of education have charge of these examinations? At present, several states and many communities face the problem of determining which institution of government shall direct public recreation. Shall the task be assigned to the existing board of education or park department, or shall a new recreation commission be established?

As civilization develops, the tendency to rely on official organizations or departments of government becomes more and more apparent.

Voluntary Organizations. A voluntary health agency is one established to serve a seemingly worth-while community need; it is not provided for by the legislature (except possibly by an enabling act or charter), but is supported primarily by donations, gifts, membership fees, and periodic drives for funds. A few examples of voluntary health organizations include the National Tuberculosis Association, National Committee for Mental Hygiene, American Society for the Control of Cancer, American Social Hygiene Association, National Society for the Prevention of Blindness, National Foundation for Infantile Paralysis, and to some extent the American Red Cross.[1]

[1] The American Red Cross is discussed in a section by itself on p. 122.

The chief functions of voluntary organizations are to exercise leadership in providing worth-while community functions for which public funds have not yet been appropriated, to demonstrate the need for acceptance of these functions as an official community enterprise or by private venture, and to relinquish control of such activities as soon as their value has been demonstrated to the community and public funds or private initiative are available to conduct the activity—thence to pursue other new activities or to disband. Most voluntary organizations would accept the first two objectives outlined above, although some would question the implications of the third objective.

Voluntary health organizations perform a great service to this country. They deserve support from the American people, especially with reference to the first two objectives listed above.[2]

Private Health Agencies. A private health agency comprises one or more persons engaged in an activity which aims to fulfill a community need and which is supported primarily by fees paid by the recipient of its services. Examples of private health agencies include physicians, dentists, and nurses who engage in private practice; certain hospitals; and insurance companies that provide health services to policyholders.

The chief functions of private agencies are to provide services for which individuals are willing to pay the fees charged, and to provide better services than those obtainable from either official or voluntary agencies. This second function, although not always realized, should represent a goal of accomplishment for private health agencies.

Life-insurance companies spend enormous sums on health examinations, information, and nursing services to certain policyholders. This form of public-health work represents a good investment for the company by prolonging the lives of policyholders and thus extending the number of premiums paid.

Industrial concerns that provide health examinations and medical services to employees for a stipulated fee might be included in this group. The practice pays rich dividends in the improvement of efficiency, morale, and productivity.

Professional Associations. A professional association represents a group of persons trained in accordance with standards set by the association, who band together to promote the general interests of a given profession and who finance the association principally by the payment

[2] The contributions of these agencies are discussed more fully under the section on Health Activities of Voluntary Organizations, p. 118.

of membership dues. Examples of professional associations include the American Public Health Association, American Medical Association, American Dental Association, American Nurses' Association, American Association for Health, Physical Education, and Recreation, and others.

The chief functions of professional associations are to promote their objectives through in-service education of members, improvement of professional morale and ethics, dissemination of technical information among coordinate professional groups, and awakening public interest in the principles for which the association stands.

Most professional associations are organized on a national, state, and local basis, although the type of organization varies with the professional group.[3] In this group might appear those organizations which have certain health interests although their main purposes lie in other fields, such as parent-teacher associations, the American Legion, and various luncheon clubs. Most of them perform valuable services to the cause of health.[4]

Organized Public Health. This section refers only to official health organizations established by the Federal government, the various state health departments, and the departments of health operating in local communities. In this respect, public health may be defined as an organization of government aimed to prevent disease, prolong life, and promote health and efficiency through improved sanitation, control of community infections, and widespread techniques of education. Mustard defines public health as "that body of knowledge and those practices that contribute to health in the aggregate either through preventive or curative measures, or both." [5]

[3] The National Organization for Public Health Nursing, in addition to representing a professional association, conducts a service program according to the best traditions of voluntary health agencies; most of the others do not.

[4] In addition to the groups described above (official organizations, voluntary organizations, private agencies, and professional associations), several commercial concerns have entered the health field and produce pamphlets, charts, and other materials designed to promote health and to increase the sale of the respective commercial product. Examples include makers of personal-hygiene aids, milk producers, breakfast-food and dentifrice manufacturers, and several others. Many of these materials contain excellent suggestions for teaching health. Local boards of education need to establish a policy relating to the use of these materials in order to utilize the benefits of helpful ones while preventing the worthless kinds from gaining access to the schools.

[5] H. S. Mustard, "An Introduction to Public Health," p. 13. New York: The Macmillan Company, 1944.

Thus public health represents, not an individual branch of service like biology or chemistry, but a broad field of social activity which utilizes the services of diverse groups of specialists for a great common cause.

All civilized countries have practiced some form of public health in keeping with the political ideology of the people. Even the ancient tribes had forms of curative and preventive medicine, first using charms to appease the evil spirits believed responsible for disease and later resorting to witch doctors to scare away these spirits. Hippocrates, the father of medicine, urged the boiling and filtering of water. History reveals the existence of sewers and a water-supply system in Jerusalem, cisterns in Carthage, and sewers in Rome as early as 800 B.C. Some of these early public-health structures amaze the sanitary and construction engineers of our time. In 1600 B.C., Moses advocated and enforced hygienic laws relating to disease prevention, and certain Jewish customs today trace their origin to these measures.

The fall of Rome and the ensuing dark ages brought forward a new era in which public health was totally neglected. According to the principles of asceticism, salvation of the soul meant disregard for the human flesh and subordination of the evil world in which man lived to the splendor of the promised land. History further reveals that the plagues of this period often killed from one-fourth to one-third of the entire population of a given country.

It has taken a long time to reeducate the public mind to the benefits of organized public health. Beginning in 1793, when the City of Baltimore established the first board of health, and in 1798 when the United States Public Health Service was created, this country has moved forward slowly but surely toward a public-health consciousness that now encompasses the entire nation. The First World War gave great impetus to this movement and helped to entrench public health as a national function within the Federal government as well as to awaken states and local communities to the importance of protective health measures.

Public health has slowly but persistently followed the development of private medical practice. Here one finds an excellent example of an official organization (public health) working cooperatively with a private enterprise (practice of medicine) toward a common social goal. As one might expect, complete cooperation sometimes fails, and one group may accuse the other of overstepping its bounds of authority or responsibility. Again, a few schools of medicine discourage potential graduates from entering the field of public health, labeling this

work as professionally inferior to private medical practice. During the early days of modern public health in this country, medical groups often used similar arguments to oppose this movement that they now express in opposition to organized medicine. Doubtless some justification exists for this point of view because public health and organized medicine differ more in degree than in kind.

Notwithstanding these honest differences of opinion, the splendid cooperation between organized public health and the private practice of medicine serves as a brilliant illustration of the way two different agencies may work together for the betterment of society as a whole.

Public health and public education have much in common. The United States Office of Education works closely with the United States Public Health Service. State health departments and state education departments both represent institutions of government designed to serve the people. Local boards of health and local boards of education enjoy mutually exclusive relationships, although both serve similar community interests. By the nature of their programs, public health and school health are closely banded together—closer, perhaps, than the board of education is to any other organization of government (with the possible exception of recreation which may involve education and the park department or recreation commission). In fact, many public-health activities have so much in common with education that school health comes closer to public health oftentimes than to other activities conducted by the board of education—a fact frequently overlooked and one indicating the need for active cooperation between these two governmental organizations.

The general fields of public health include sanitation, control of communicable diseases, and education. Sanitation involves determination of an adequate and safe water supply, inspection of food and food handlers, proper disposal of garbage, and the adoption and maintenance of certain housing standards. The control of communicable diseases deals with the items listed immediately above together with quarantine, immunization and vaccination, disinfection, sanatoriums, legislation, and education. Public-health education consists of issuing materials on prenatal and early-childhood care, various publications, vital statistics, school-health education through the loan of trained personnel, and adult classes.

To accomplish their work, public-health departments employ a number of specialists such as physicians, nurses, dentists, oral hygienists, bacteriologists, sanitary engineers, psychologists, chemists, health educators, food inspectors, entomologists, sociologists, social workers, statisticians, and others.

The proper allocation of responsibilities between Federal, state, and local governments has entailed years of study and experimentation. Preeminence of the state in this country often confuses European visitors accustomed to national dominance but, whether right or wrong, the system of state rights is fundamental to the American way of life.

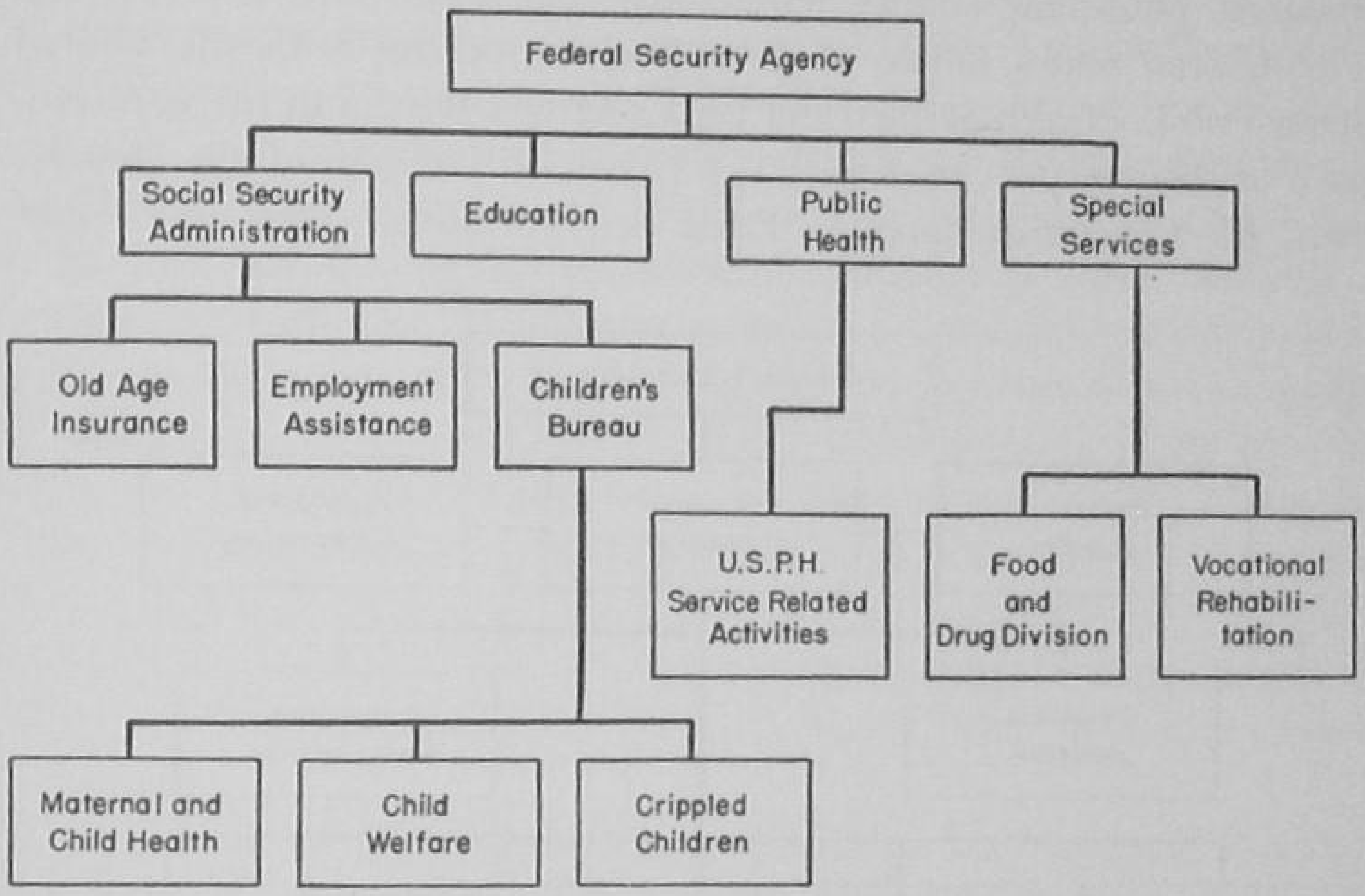

FIG. 7. Organization of the Federal security agency, 1946.

Generally speaking, the allocation of function in public health is (1) Federal: regulation of interstate health problems, quarantine associated with maritime and international affairs, and supervision of the health of immigrants; (2) state: minimum health standards for the commonwealth in the form of legislation and regulations, enforcement of laws and regulations, supervision of local health administration, and control of intercommunity health problems; and (3) local: establishment of local ordinances within the framework of state legislation, and enforcement of these ordinances along with the laws and regulations adopted by the state.

The Federal Government and Public Health.[6] Several national organizations render effective service to the cause of public health. Perhaps the most significant is the United States Public Health Service

[6] See H. S. Mustard, "Government in Public Health," Chap. II. New York: The Commonwealth Fund, 1945, and W. G. Smillie, "Public Health Administration in the United States," 3d ed., Chap. XXXII. New York: The Macmillan Company, 1947.

which conducts extensive research, controls international quarantine, directs the medical aspects of immigration, administers several hospitals for merchant seamen, provides financial and technical aid to state and local health departments, and publishes informational reports and bulletins. The Children's Bureau deals primarily with mothers and children, publishing studies and reports which concern their welfare. The United States Office of Education cooperates with the United States Public Health Service and the Children's Bureau in the performance of their respective duties. The Extension Division of the Department of Agriculture sponsors home demonstration agents who assist

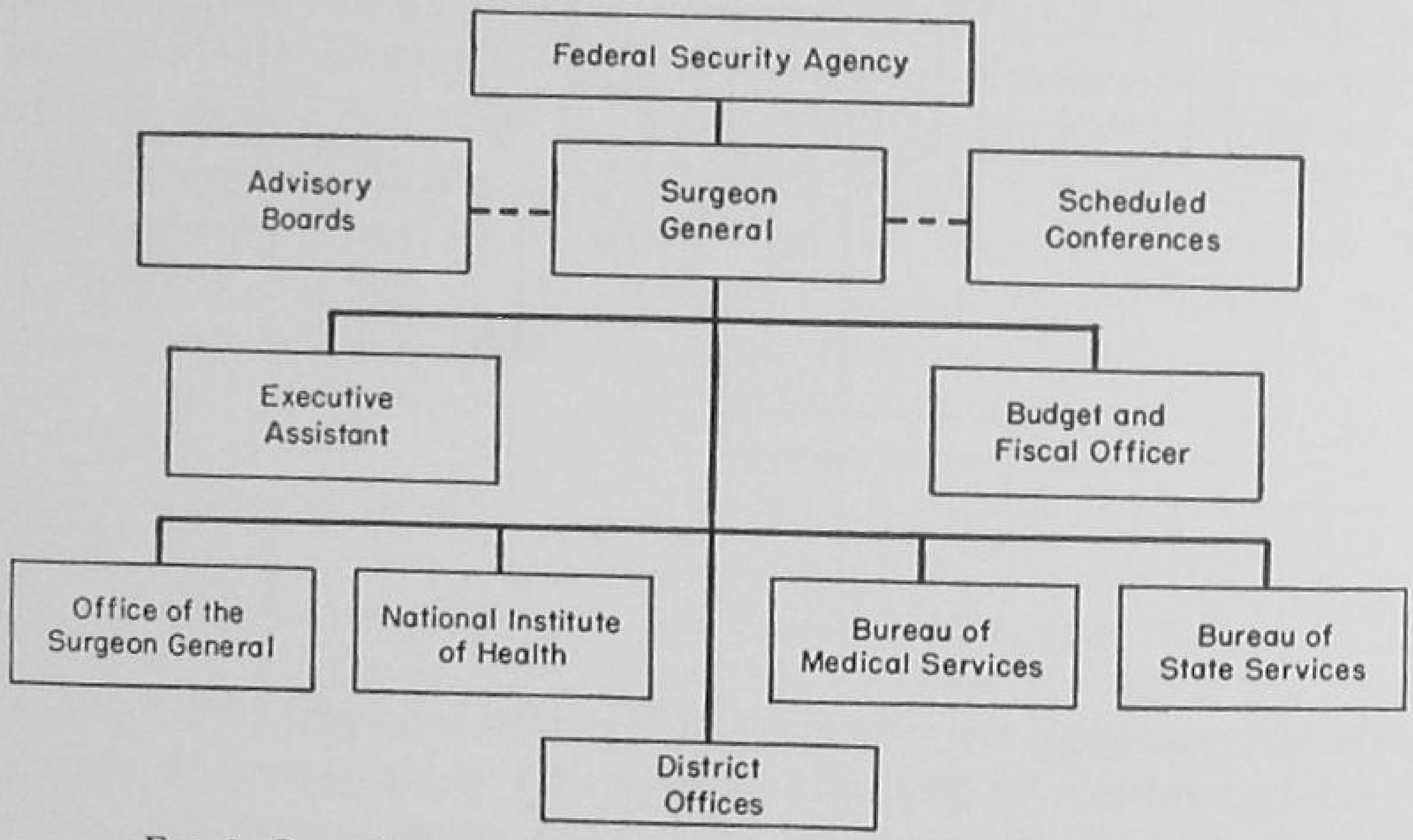

FIG. 8. Organization of the United States Public Health Service.

in health promotion among the rural areas. The Bureau of Census conducts a nation-wide census every 10 years, collects transcripts of birth and death certificates, and publishes summaries of these data for educational distribution. The Bureau of Indian Affairs furnishes hospitals and medical care for Indians. The Veterans Administration conducts an extensive program of hospitalization and rehabilitation for veterans. The Army, Navy, and Air Force provide complete medical care for officers and enlisted men.

In recent years state and local health departments have received increasing amounts of Federal public-health funds for expenditure in accordance with standards adopted by the parent organization.

State Governments and Public Health.[7] State influence in public health has increased markedly during the present century. The fundamental police powers originally assumed by states in these matters continue to operate, with the addition of supervisory and technical services rendered by the state to local boards of health to improve the effectiveness of these latter organizations.

Changes in the structure of modern society and the development of medical science have been responsible for stronger state health departments. The introduction of new problems and the transformation of old ones render local health departments unable to cope with situations of intercommunity implication. Examples of these problems include the following: The water supply for a given city often is stored in reservoirs located in several political districts outside the immediate municipality. The production of food and milk for a single city may involve several other communities, or even states. Summer camps present problems better handled by the state than by local districts. Even personal health problems have their intercommunity relationships, as in the migration of workers and with school children moving from one community to another. These movements lead to increased state control.

Through state legislatures the people adopt laws designed to control conditions unfavorable to health and enact statutes to promote the welfare of citizens. The legislature further creates a state health department to enforce these laws and to establish certain regulations of its own within the framework of legislative statutes. These regulations have the force of laws.

The state health department renders many services to local districts. It helps the communities to recognize their own health problems and to organize facilities for handling them. It assists in providing services beyond the financial resources of the local district, such as laboratory facilities, technical services on sanitation, experts on water supply and sewage disposal, advice concerning occupational diseases, institutional care for certain health disorders, and many others. Oftentimes the state health department provides advisory service to local districts in the establishment of desirable standards and supervisory aid in maintaining these standards. Only in rare instances does the state health department deal directly with the people, preferring to work through

[7] See Mustard, *op. cit.*, Chap. III, and Smillie, *op. cit.*, Chap. XXXI.

local health departments and thus preserving the political lines of organization upon which American democracy is founded.

Because of the important functions performed by state health-department personnel, they must possess high professional qualifications and conduct their work without political domination. A nonpolitical state board of health or an advisory council should select the state health commissioner on the basis of his professional expertness. Specially trained individuals devoting full-time service should direct the various bureaus of the state office and assist local communities where many health officers give only a part of their time to this work.

Appropriations for state health programs have increased markedly in recent years. A portion of these funds maintain the state office and staff. Frequently the state health department gives direct subsidies to aid the poorer communities in the performance of their respective duties. Federal funds supplement those made available by the state legislature, to be administered by the state health department in conducting its own affairs and for distribution among local districts.

Local Governments and Public Health.[8] The local public-health organization derives its powers from statutes enacted by the state legislature. These include direct laws for enforcement by the local district under the supervision of the state health department, regulations adopted by the state health department (which carry the force of laws) for enforcement by local authorities, and regulations approved by the local board of health (within the framework of state legislation).

States vary in delegating responsibilities to local districts. In some states, the major authority rests with the commonwealth; in others, much of the authority resides in the local board of health. Both plans have advantages and disadvantages. New England, with the influence of the colonial era, remains true to the principle of local dominance over state authority. Other parts of the country delegate greater responsibilities to the state government. Probably the trend is toward more state control.

The crux of the problem is that local health organizations should maintain a satisfactory program, properly organized, adequately financed, and conducted by trained personnel. To ensure such a program the health department deserves the support of appropriate legislation and enlightened public opinion. Since many local health districts

[8] See Mustard, *op. cit.*, Chap. IV, and Smillie, *op. cit.*, Chaps. XXIX and XXX.

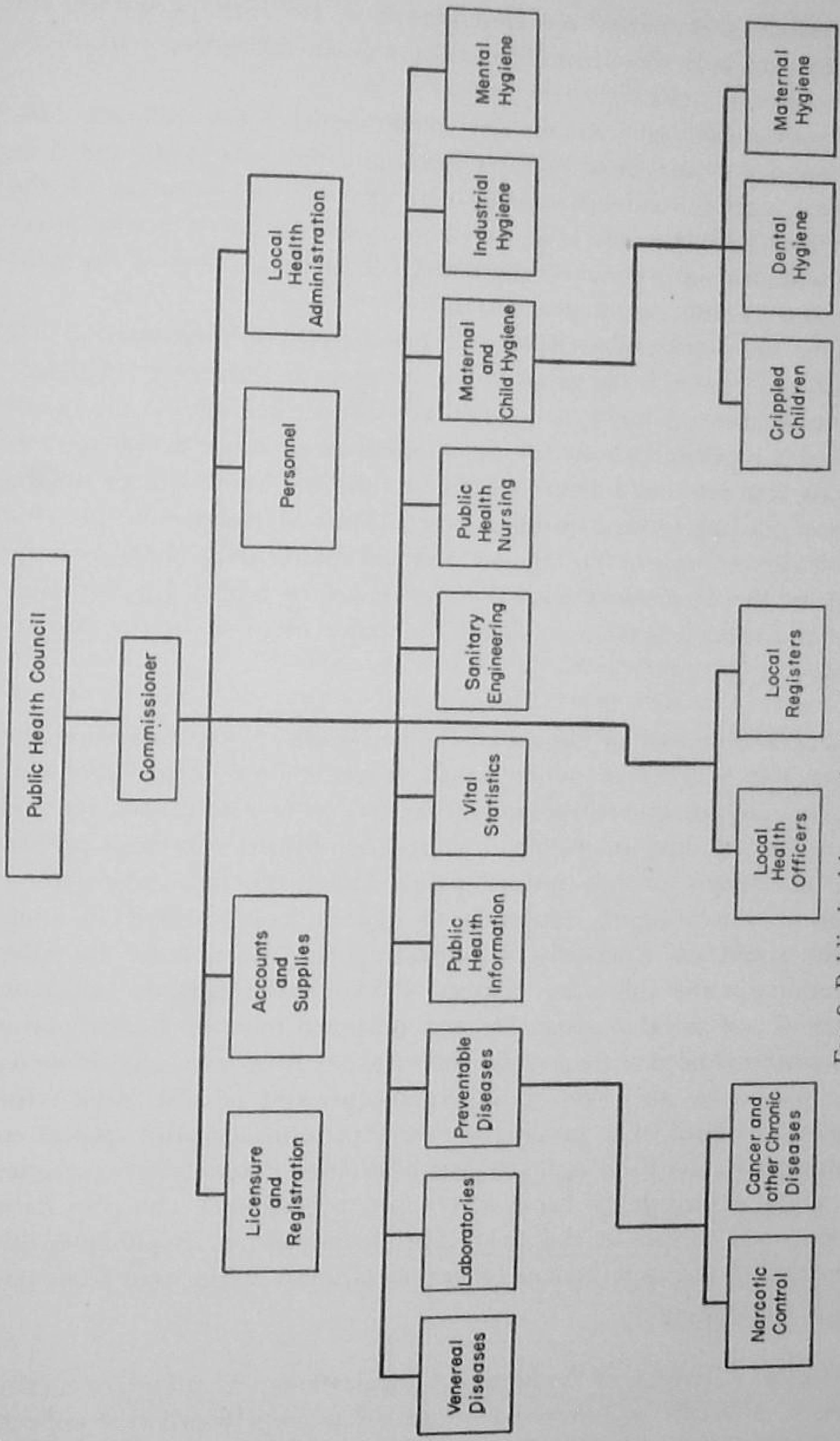

FIG. 9. Public health organization in the state of Connecticut.

are too small to justify the employment of full-time personnel, the trend favors enlarging these districts by legislative enactment to obtain more efficient services.

A satisfactory program of local public-health work embraces disease control as stipulated by laws and regulations; diagnostic aid, laboratory services, and institutional care beyond the resources of the individual patient or physician to provide; stimulation of public interest for improved preventive health services; and education of the public toward better community health.

Some basic principles of local health-department organization are as follows: Establish the program as a recognized form of government within the town, county, or coordinated district. Include on the board of health reputable physicians, representatives of other health organizations, and interested citizens. Select a full-time health officer on the basis of his professional qualifications, adequately compensate him for his work, and ensure him against political interference. Correlate the work of the department with the state board of health. Employ full-time and trained persons to direct the major divisions of the department.

General Summary of Organized Public Health. Notwithstanding the remarkable progress of public health in recent years, many problems remain unsolved due to the present limitations of medical science and to the lack of support given to this program by the American people. The indifferent attitude toward public health represents the greater problem. Public-health education in schools, colleges, and in adult classes could aid materially in improving the situation by focusing attention on the following matters: Public health deserves adequate financial and moral support. Services proposed must be based upon a demonstrated need and upon the ability of the people to support them. The public has the right to expect the greatest possible return for money expended. The public must be kept informed with respect to health needs, and their rights in health services. Public-health activities should be placed in the hands of competent personnel who plan their professional careers in this field. The determination of public-health policies and the appointment of personnel must remain free from political domination.

Health Activities of Voluntary Organizations. A voluntary health agency is usually administered by an autonomous board that collects funds for its support mainly from drives or donations. It conducts a

program, with or without paid workers, directed toward furthering public health by providing health services or education or by promoting research and legislation relating to public welfare.

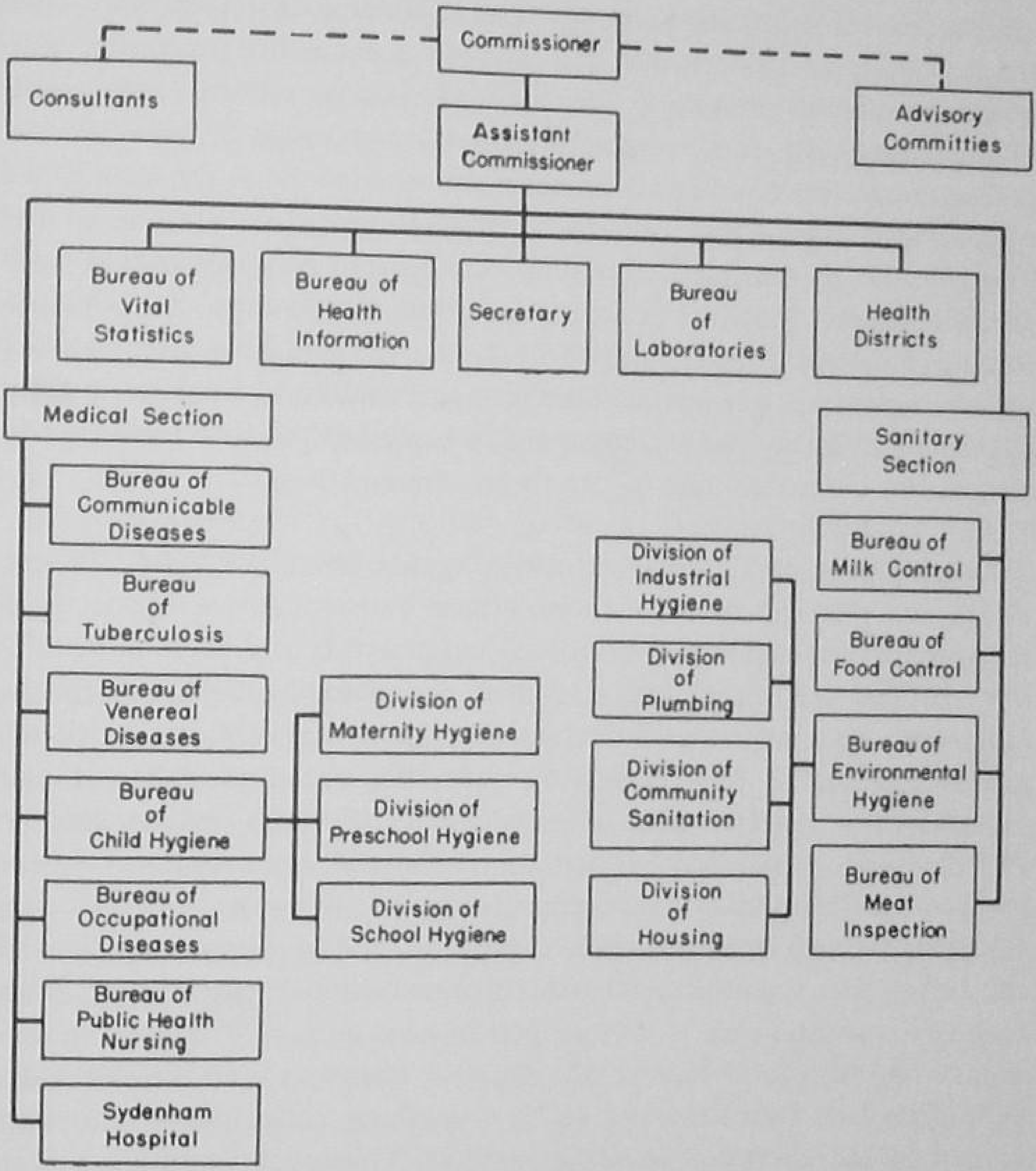

Fig. 10. City department of health organization in Baltimore.

Some years ago the attempt to call these agencies "unofficial" or "nonofficial" to distinguish them from the "official" organizations, described in the previous section, met with severe opposition. In fact a few of these organizations would prefer the word "private" as a designating adjective, perhaps because of the esteem awarded by some people to private education as compared with public education. At any rate, common usage now favors the term "voluntary" organizations for

that vast group of agencies that, for the most part, renders invaluable service to the general cause of public health.

Classification of Voluntary Health Agencies. The need for some kind of classification for these agencies arises from the fact that, since the beginning of the century, the number of them has increased from a mere handful to something like 20,000. Urban centers may have hundreds of them and rural communities a score or more.

Classification according to function reveals that some are concerned with special organs and systems, such as abnormal conditions of the heart, dental defects, loss of vision, or impaired hearing; others with specific diseases, such as tuberculosis, cancer, poliomyelitis, diabetes, and the venereal diseases; and still others with problems affecting the welfare of certain groups, such as maternal and child hygiene, mental hygiene, and safety. Sometimes a single organization may render services within more than one of the above classifications.

Development of Voluntary Health Organizations. Several economic, social, and political forces may have been responsible for the tremendous growth of voluntary health agencies within the present generation. In the first place, knowledge of the scientific advances of the nineteenth century became widely circulated, and official health organizations lacked the funds and leadership to adopt and put into practice these revelations of modern science. Second, industrialization and economic expansion created more material resources and leisure for devotion to philanthropic enterprises. Third, the tradition of free enterprise—freedom of initiative, expression, and inquiry—coupled with the belief that organizations under governmental control were likely to provide second-rate service helped to awaken public interest in voluntary organizations. Fourth, the aggressive tendency of the American people to face problems and to do something about them may have helped in the extension of these services. Whatever causative factors may have been responsible for the birth of these agencies, the fact remains that they have pushed forward with varying degrees of success and only in rare instances has one ceased altogether to function.

Somewhere around 1892 a small but respected group of Philadelphians established a modest society for the prevention and cure of tuberculosis. Within a few years another group of influential citizens in New York City organized to attack prostitution and venereal diseases. The problem of mental hygiene appealed to the people of Connecticut and they established a voluntary organization to promote these

interests. Out of these meager beginnings have emerged all sorts of voluntary agencies. Most of them began locally and on a small scale, then expanded into great national organizations.

Each organization is controlled by a board or committee responsible for its operation and preservation. Thousands upon thousands of responsible men and women devote their time, either on salary or as volunteers, to these enterprises. By gifts, donations, drives, and membership dues the organizations derive their financial support. Like 20,000 separate entities these agencies are scattered about the country, except where a local community chest or council has exercised the wisdom and strength to organize them into some sort of a social pattern, and except as each agency receives direction from its state or national counterpart. No one knows the precise amount of money spent by these organizations; a fair estimate for the better known nationally sponsored agencies would approximate $50,000,000 annually.[9]

Services Rendered by Voluntary Agencies. Without doubt the voluntary agencies render most significant contributions to public health. They concern themselves with the chief causes of sickness and death. They aim to reduce sickness and premature death and to increase the general health through direct services, a broad educational program, and promotional activities. Unencumbered by political restraints, they are free to experiment with new procedures and techniques and to concentrate on specific health problems to a degree not enjoyed by the official organizations. They have helped to keep official public-health departments alert by advancing new ideas and by acquainting the people with services needed. They deserve the support of citizens interested in improving the health of the general public.

Limitations of Voluntary Agencies. The criticisms leveled at voluntary agencies probably apply to certain ones and not to others, and many organizations receive the blame applicable to a few.

One striking element is the lack of centralized planning and direction of these organizations. Most of them are small and serve but a mere segment of the population, even in local communities. Especially do they fail to attack the total health problem in the community. They often present evidence of defective organization, inferior leadership, and alleged results based upon questionable data.

Voluntary health agencies sometimes lag behind in adapting their

[9] S. M. Gunn and P. S. Platt, "Voluntary Health Agencies," p. 5. New York: The Ronald Press Company, 1945.

programs to the changing needs and interests of modern society. Once established to perform a particular function in a specific way, an agency may experience difficulty with the controlling board and employed or voluntary leaders in redirecting the affairs of the organization. In the general trend toward increasing public dependence upon official organizations, a voluntary agency may neglect or refuse to cooperate with them. In the final analysis many of these functions rightfully belong to the official organizations.

Because of the wide variety of voluntary agencies, they overlap in function at many points and duplicate the services of each other. Failure to articulate their programs with official organizations and the overlapping and duplication of function among themselves often lead to conflict and professional jealousies and to an extravagant use of funds raised largely through indirect taxation. The medical profession has learned to regard the patient as a total organism and to treat him as such; specialized health agencies might learn a valuable lesson from this example.

The entire program of voluntary agencies needs careful study and evaluation in terms of their contribution to the welfare of society. Such study and evaluation would help to preserve those agencies performing worthwhile functions—even point the way to increased support for them—and help to restrict the operation of those of questionable value.

The American Red Cross. The American Red Cross belongs in a class by itself. On one hand it is a voluntary organization supported by membership dues, drives, and donations. On the other hand it frequently joins with official governmental agencies to relieve the suffering of mankind and may receive official subsidies in an emergency. Millions of persons willingly accept membership in Red Cross chapters scattered through the land that serve in a great variety of disasters threatening the lives of people.

The American Red Cross sets a splendid example to voluntary agencies in the efficiency of its organization and the exemplary program conducted under the leadership of qualified personnel.

Endowed Foundations. Several endowed foundations render effective services to the cause of health. These philanthropic organizations make significant contributions annually to medical research, the evaluation of public-health activities, preparation of public-health personnel, experimentation with new techniques, education to direct public opinion, and support for public-health ventures for which tax

funds are limited. Included among these well-known organizations are the Rockefeller Foundation, the Commonwealth Fund, the Milbank Memorial Fund, the Kellogg Foundation, and many others.

Need for the Coordination of Agencies. The success of any health program depends largely upon the degree of cooperation established among official, voluntary, and private organizations and between these in turn and professional associations. This important principle, so frequently ignored, applies equally at local, state, and national levels of operation.

The precise reasons for the apparent lack of observance of this principle remain somewhat obscure. Quite obviously the nature of governmental organizations, with the mutual exclusiveness of their delegated functions, contributes to their unwillingness and inability to join forces in attacking health problems. Likewise the charters to voluntary agencies usually define and limit the specific fields in which they may operate. Probably the basic reason lies in the strong individualism that characterizes the American people and the institutions they create. In recent years the need for substituting cooperative enterprise for rugged individualism finds no better example than in the field of health.

The war years clearly demonstrated the value of mobilizing and coordinating all resources to ensure success. Oftentimes the health program is retarded because of professional differences of opinion among personnel and because of the overlapping of services. The lessons of cooperation learned during the war could be utilized to produce beneficial health results if concerted action became a reality.

The Schools as an Example of Needed Health Coordination. No better illustration of the need for active cooperation exists than in the school-health program. Not only do the schools cut across a great segment of the population, but educational institutions present a mass of interrelated health problems similar to those found anywhere.

The school needs the support of many existing community agencies in solving its health problems, and the school in turn may help many of these agencies. Yet only by carefully defining the problems and by allocating specific functions to the agency best equipped to render effective service may waste be eliminated and the best results ensue.

The school-health examinations provide an excellent example. The responsibility for them may belong, by legislative enactment or appropriate regulation, to either the board of education or the board of health. If the board of health assumes responsibility for them, the

school authorities should inform the health officials concerning the type of examination needed to obtain the best educational results and teach children the importance of periodic health examinations for everyone. The practicing physicians in the community have an interest in these examinations because of the natural relationship between school health and conditions in the family, and because the school-health examination never should replace the work of family physicians. Suppose, on the other hand, that a voluntary agency plans chest X rays as a tuberculosis test for school children. Here, the official agencies of education and public health should lend a hand, because students need to understand the reasons behind the X rays and to appreciate the ravages of tuberculosis. Of course the actual control of communicable diseases rests legally with the department of health. Suppose, further, that an examination discloses unhealthful conditions requiring remedial treatment among certain children whose parents cannot afford to have the defects corrected; here the relief and welfare agencies, either official or voluntary, enter the picture.

Many other illustrations of the need for cooperation readily come to mind. Generally speaking the school assumes the responsibility for the sanitation and safety of buildings and grounds, yet the health department has an interest in the sanitary aspects of school premises and the departments of police and fire have responsibilities for the safety of persons using the buildings. The erection of temporary bleachers to provide seating facilities for spectators at school athletic events may call for inspection by the department of buildings and grounds before these facilities are used. Such professional associations as parent-teacher organizations, medical and dental societies, and teacher groups may render valuable assistance in molding public opinion toward improved health services or the school-health program as a whole. The American Red Cross attempts to improve the quality of first aid in the schools and offers to furnish qualified instructors. Parent-teacher associations establish programs to detect and correct the defects of preschool children. The list of illustrations might fill several pages.

A democratic society should not minimize the importance of these national, state, and local groups in the solution of school-health problems and in the improvement of general community welfare. Most of the organizations desire to cooperate, but many of them do not know how. Any school system that indiscriminately opens its doors to the variety of independent and disassociated programs clamoring for admittance may so disorganize the educational process that the school

cannot effectively conduct its primary responsibilities. The same is true in community-health programs; some plan of organization appears to be essential.

Techniques of Community Organization. About the only way to utilize effectively all the health resources in a community for the common good of the largest number of citizens is to form a *coordinating community health council.* The same general plan applies to states and on the Federal level.

Such a council would comprise elected representatives from the various agencies interested in health problems—official, voluntary, private, and professional. Many of these councils already exist and, for the most part, render distinguished service in dealing with health whenever and wherever problems arise. Obviously, skilled leadership represents the most vital factor in the organization and operation of these councils. Sometimes the schools exercise the initial leadership in forming the council, although more often the original stimulation comes from a voluntary organization.

Frequently a coordinating community-health council soon expands into a *community council,* as such problems as housing and welfare, closely associated with health, naturally creep into the deliberations of the original organization.

The best results usually follow the employment of a paid leader skilled in the techniques of community organization, although this leader must recognize that the adoption of policies remains with the elected representatives who have direct recourse to the various agencies, which in turn represent the will of the people.

On the national level this coordination of agencies was effected through the National Health Council, organized in 1921. The National Health Council came into existence when several critical leaders raised searching questions about the possible financial waste, duplication of effort, and public confusion occasioned by the large number of independent agencies in their attempts to serve sections of the American population. These institutions, both official and voluntary, originally included the American Child Health Association (no longer in existence), American Federation of Organizations for the Hard of Hearing, American Heart Association, American Nurses Association, American Public Health Association, American Red Cross, American Social Hygiene Association, American Society for the Control of Cancer, National Committee for Mental Hygiene, National Organization for Public Health Nursing, National Society for the Prevention of Blind-

ness, National Tuberculosis Association, United States Children's Bureau, and United States Public Health Service.

The National Health Council has both achieved and fallen short of its original purpose. It has developed leadership in cooperative planning, but has failed to establish a joint plan of financing national health agencies. It has helped to establish liaison between agencies in the solution of certain specific health problems, yet has not effected the unification of other important health movements. In some respects it has applied diligent effort to the formation of coordinated health policies; in other respects it has not directed its efforts to the important health issues.[10] On the whole, the National Health Council deserves commendation.

A few states have followed the lead of national organizations by establishing *state health councils*, for the most part along lines indicated above.

The formation of numerous coordinating *community* health councils follows the generally accepted pattern that the local unit represents the focal point of attack in solving health problems, and that the community itself best understands the nature of these problems. Exceptional success has been reported with community health councils in Bullock County, Ga.; Calhoun County, Mich.; Washington County, Tenn.; Hartford, Conn.; and in many other localities.

The chief purposes of such councils are to determine the health problems in the community in need of study and action; to allocate the responsibility in the pursuance of each problem to one or more of the local agencies; to assist in furnishing the necessary resources through local endeavor, aided by state and national funds and leadership; to provide for the education of all persons in the community with respect to existing conditions; and to evaluate the success of techniques used to solve problems at each step along the way.

The future would appear to hold great promise for coordinating community health councils, assuming that the various organizations appreciate the values inherent in such a plan, that sound leadership is obtained, and that the public is kept informed through appropriate educational procedures concerning the health needs of the community, the status of problems in process of solution, and the results obtained.[11]

[10] *Ibid.*, p. 10.

[11] For one type, used in England, see George Baehr, "The Peckham Experiment," *New Steps in Public Health*. New York: Milbank Memorial Fund, 1945. See also B. B. Burritt, "More Adequate Provision and Better Interpretation of Community Facilities," *ibid.*

Summary

All health activities come under the general direction of one or more of the following groups: (1) official organizations, (2) voluntary organizations, (3) private agencies, and (4) professional associations.

An official agency is established by legislative enactment and supported primarily by public tax funds.

A voluntary health agency is established to serve a seemingly worthwhile community need, is not provided for by the legislature (except possibly by an enabling act or charter), but is supported primarily by donations, gifts, membership fees, and periodic drives for funds.

A private health agency represents one or more persons engaged in an activity which aims to fulfill a community need and which is supported primarily by fees paid by the recipient of the services.

A professional association represents a group of persons trained in accordance with standards set by the association, who band together to promote the general interests of a given profession and who finance the association principally by the payment of membership dues.

Organized public health may be defined as an institution of government aimed to prevent disease, prolong life, and promote health and efficiency through improved sanitation, control of community infections, and widespread techniques of education. Organized public health operates on local, state, and Federal levels. It deserves adequate financial and moral support. Services proposed should be based upon a demonstrated need and upon the ability of the people to support them. The public has a right to expect the greatest possible return for money expended; it must be kept informed with respect to health needs and individuals' rights in health services. Public-health activities should be placed in the hands of competent personnel who plan their professional careers in this field. Finally, the determination of public-health policies and the appointment of personnel must remain free from political domination.

Classification of voluntary health agencies according to function reveals that various ones are concerned with special organs and systems, special diseases, and problems affecting the welfare of certain groups. Without doubt the voluntary agencies render most significant contributions to public health, and the criticism sometimes leveled at them pertains only to a few.

The success of any health program depends largely upon the degree of cooperation established among official, voluntary, and private organizations and between these in turn and the professional associations.

To this end, the coordinating community health council doubtless represents the best answer. Such councils may operate effectively within the Federal government, a given state, or a local community. Frequently such organizations soon become community councils as problems relating to housing and welfare, closely associated with health, demand a place in their deliberations.

Questions and Problems for Discussion

1. How do you account for the great number of different health agencies designed to serve the American public? Do you believe that the number and variety represent (*a*) too many, (*b*) not enough, or (*c*) a wholesome situation at present? Explain your answer.

2. What is behind the implications of the statement, "Most departments of government, however, were established many years ago to conform to a social pattern much less complex than that of the present"? In what ways might a reorganization of existing official agencies benefit society?

3. Public-health activities have expanded in many directions during the past half century. What are some of these directions? What factors and forces have supported each development? Opposed it? In what directions may public health expand within the next 25 years? What forces will support and restrict these developments?

4. Should the Federal government take a more or less active interest in public health? State a basic principle relating to the Federal government and its responsibilities for public health and list the Federal activities desirable to fulfill the implications of your stated principle.

5. Follow the essential procedures outlined for Question 4 above, but relate these procedures to state and local public-health organizations. What significant differences do you note between responsibilities assumed by government on the three levels?

6. Review the three functions listed in this chapter for voluntary organizations. In what ways do you agree or disagree with these functions as stated? Would you include others? Would benefits to society accrue if legislative acts were to legalize the allocation of certain health activities to one or more of the voluntary organizations?

7. What factors have been responsible for the rapid increase of voluntary health organizations within recent years? What factors have restricted this development? Do you believe the trends in the immediate years ahead will be favorable or unfavorable to the extension of these services? Why?

8. To what extent is it true that private enterprise represents the backbone of health services in this country? What factors may strengthen or weaken the position of private enterprise, relating to health, within the next generation? What is the proper role of health education in this matter?

9. In what ways might professional associations render greater assistance to the cause of health? In your opinion, what associations now give the most efficient services to the largest number of people? State a principle,

based on sound health education, that professional associations generally might adopt to promote the cause of health.

10. On what level (national, state, or local) are coordinating community health councils most likely to succeed? Give reasons for your answer based upon social, political, and economic elements. What factors largely determine the success or failure of such councils on any level? What techniques might prove most effective in reducing the reasons for failure? Select the community with which you are most familiar and outline the steps necessary to establish such a council; give attention to such factors as (*a*) legality, (*b*) representation, (*c*) leadership, (*d*) program, (*e*) financial support, (*f*) keeping the public informed, and (*g*) evaluation of progress.

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CHAPTER 5

SCHOOL ORGANIZATION FOR HEALTH

The Need for Effective Planning. Health education requires more careful attention to effective planning than many of the traditional activities in the school program. This truism becomes increasingly evident as the administrator or teacher reflects upon the growing importance of health education in the schools of America, appreciates the close relationship existing between problems of growth and development and activities of health education, observes the need for improved and unified preparation of school personnel in matters relating to health, notes the frequency with which health education violates traditional school organization by cutting across subject-matter lines and services, and recognizes the demand for close articulation between school health and similar programs conducted by the home and community.

Health education pervades many of the customary subjects and services of the school. Except in the elementary grades, school organization follows largely by tradition the plan of separate subjects and independent services. Thus biological science, home economics, physical education, and others constitute relatively distinct areas within the school, despite periodic attempts to break down subject-matter lines. In like manner the services of custodial care, school feeding, health examinations, and attendance operate as separate entities. The planned school-health program utilizes the resources of all these subjects and services.

Another important item in effective planning deals with the relationships of the school program to various health activities normally conducted by the home and by official, voluntary, and private agencies in the community. Although the school may never, with profit, usurp the prerogatives of the home in health matters, properly conducted schools help to make the home a happier and better place for children. The board of health constitutes the official health agency charged by law with specific functions designed to protect and promote the physical welfare of the community. Numerous voluntary organizations

assume the responsibility of initiating and conducting certain health activities, either ignored by other groups or neglected because of impoverished budgets. Private medical, dental, and nursing practitioners represent the foundation of health treatment and care according to the existing principles of social democracy. All of these factors deserve serious consideration in planning the school-health program.

General Outline of the School-health Program. The school-health program encompasses a wide range of activities. Some school systems assume either major or minor responsibility for many of them; other school systems confine their efforts to a few. Several authorities in the field group the activities, for convenience, under such general headings as (1) health services, (2) healthful school living, (3) health and safety instruction, and sometimes (4) education of the handicapped (special education).

Health Services. The protection and improvement of the health of students and school personnel through health services involve the cooperative efforts of parents, physicians, dentists, nurses, teachers, psychologists, and others. The actual task of organizing these services for effective action rightfully belongs to the school authorities, although the conduct of some of them may rest with other groups. All health services finally approved by the board of education for children should be made available also to teachers and other employed personnel. The growing conviction that the teacher occupies a most strategic position in this program deserves mention. All health services contain valuable source materials for health and safety instruction.

The program of health services includes first aid for injuries which occur at school, emergency care for sudden sickness, control of communicable diseases in accordance with provisions established by the health department, including vaccination and immunization, determination of health needs, commonly known as the health examination, follow-up for the correction of remediable defects, observations by teachers and nurses to detect early signs of illness or defects, and certain aspects of the school feeding program.[1]

Healthful School Living. This aspect of the program refers to the environment in which the child lives while at school.[2] One of the best means of helping the child to acquire enduring attitudes and apprecia-

[1] Chapter 6, Health Services and Guidance, discusses the principles underlying this program in some detail.

[2] "Health in Schools," *20th Yearbook*, American Association of School Administrators, p. 227. Washington: National Education Association, 1942.

tions toward sound health practices in the home and community is to provide a healthful school environment. Although the factors associated with this program are legion, some of the more essential ones are building location, construction and maintenance of the building, the school program itself, relationships between pupils and adults at school, the health of teachers and other school personnel, and certain aspects of school feeding.[3]

Health and Safety Instruction. This area refers to an organized and systematized body of subject-matter experiences designed to improve the lives of children and adults. In recent years instruction in safety has been included as a part of the health course of study, although some school administrators prefer to organize the two programs as separate units.

Appropriate courses of study make provisions for the organization of content around such divisions as personal regimen, safety, mental health, social health, professional health services, public health, and temperance; selection of methods suited to the needs and capacities of the learner, either youth or adults; utilization of suitable teaching materials; adoption of modern texts; cooperation of helpful out-of-school agencies; and evaluation of results in terms of the objectives sought.[4]

Education of the Handicapped. This area (sometimes called special education) refers to pupils who, because of specific physical disabilities, require special classes or schools for appropriate education. Until recently many school authorities preferred to organize the education of the handicapped as a separate department of instruction. The trend toward regarding this program as a part of health education appears justifiable from the standpoint of both function and personnel. Most classes or schools for the handicapped originate because of physical limitations among students and, with few exceptions, the persons who have charge of these students need a rich background in health education.

The types of special classes planned depend upon the efforts of interested persons both within and outside the school system and the funds available to support the enterprise. Some authorities list the following types of special classes, periods, or methods of instruction: (1) for pupils needing lip-reading instruction and speech correction; (2) for the severely crippled, upon objective evidence that such pupils

[3] Chapter 8, Healthful School Living, contains a more complete treatment of this program.

[4] Chapter 9, Health and Safety Instruction, contains a detailed treatment of this program.

cannot adjust themselves to regular classes; (3) for the totally blind or deaf; (4) for pupils with vision defects of 20/70 or worse (sight-saving classes); (5) for pupils unable to attend school (the homebound), with education furnished by special tutors; (6) for pupils with an intelligence quotient of from 50 to 70; and (7) for pupils with severe orthopedic defects (corrective physical-education classes).[5]

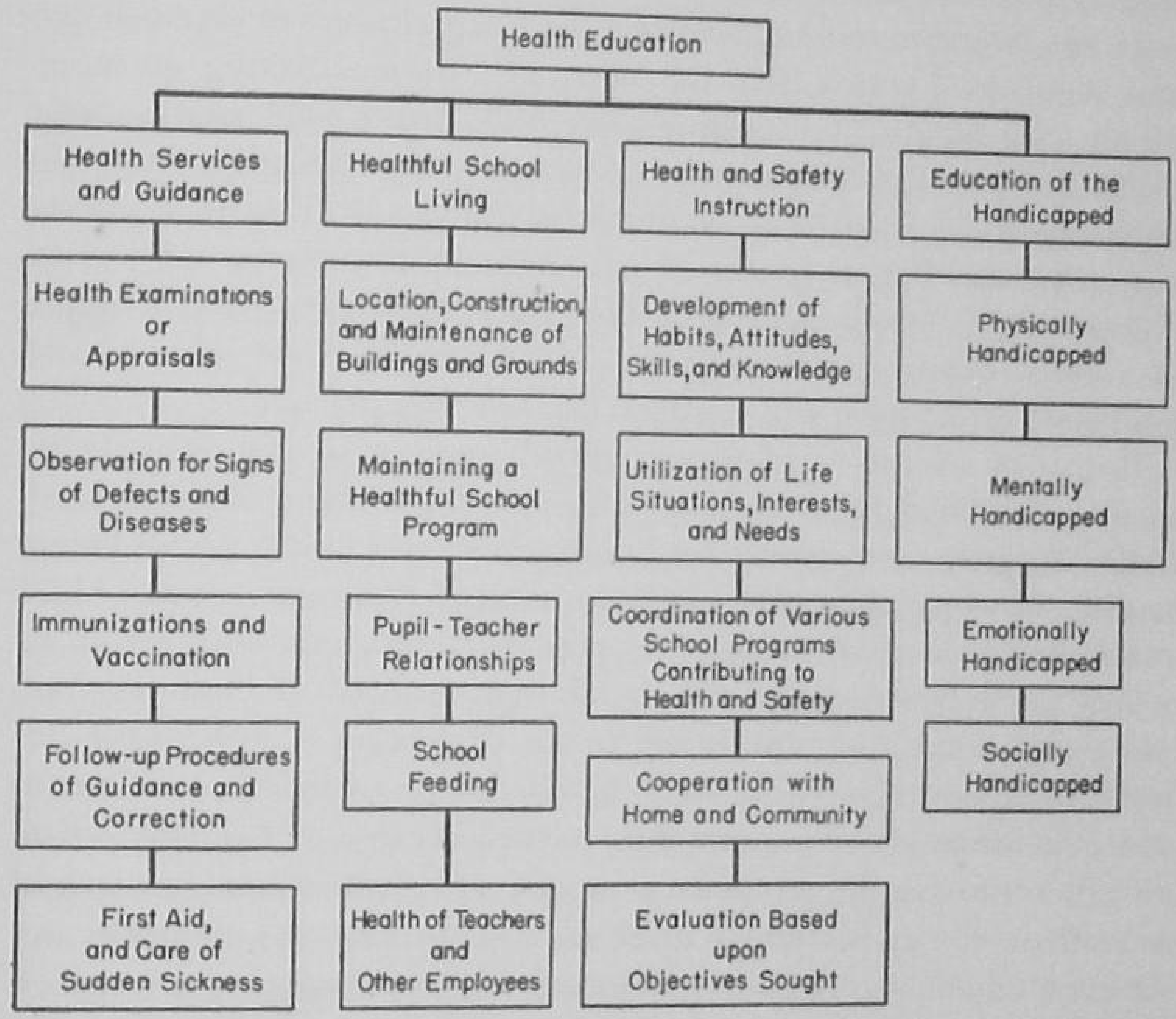

FIG. 11. Functional organization of health education.

Responsibilities of Boards of Education. The rapid development of health education in recent years leaves many boards of education in a quandary with respect to the proper way to administer this program. Beset on all sides by pressure groups that attempt to stimulate lax boards into more effective action or to restrict ambitious boards from usurping activities belonging to other institutions of government, boards of education find school health to be one issue wherein there is no generally accepted practice to guide them in the formulation of policies. When school superintendents and teachers lack the prepara-

[5] Chapter 7, Education of the Handicapped, explains more fully the essential features of this program.

tion necessary to advise the boards wisely on these matters, confusion or reticence too often occurs in the planning stages and the results obtained seldom meet approved standards.

The general principles governing the administration of health education coincide with those affecting other school activities. The board of education receives its basic powers and responsibilities from the state legislature, either through mandate or implication. In addition state legislatures authorize state education departments to establish certain regulations which have the effect of laws in directing or supervising local boards of education. The local board itself enjoys many rights and privileges granted to it directly by the legislature or by the state education department. Within this framework, boards of education may establish programs of education in accordance with community needs, the limitations of budgetary resources, the willingness of voters to support the enterprise, and the competence of employed personnel to organize and conduct the activities planned.

Boards of education adopt and initiate appropriate policies relating to the items listed in the section above, General Outline of the School-health Program, and classified as health services, healthful school living, health and safety instruction, and education of the handicapped.[6] More precisely the list will include (1) periodic health examinations of all school pupils with reexaminations for those in need of these services; (2) a follow-up program leading to the correction of remediable defects; (3) observation of pupils by teachers and nurses; (4) vaccination and immunization for pupils unless excused because of religious beliefs or upon the family physician's request; (5) provisions for special schools or classes for pupils in need of such care; (6) hygienic and sanitary school plants and equipment; (7) a school program which does not cause undue fatigue; (8) employment of teachers and other school personnel who are free from unsightly orthopedic defects or physical disorders and emotional disturbances; (9) feeding accommodations for the midday meal and special nutrition programs as recommended by competent authority; (10) first aid, care of sudden sickness, and safety provisions in all schools; and (11) a definite program of health and safety instruction leading toward the inculcation of desirable habits, attitudes, and skills based upon scientific health knowledge.

Misunderstanding sometimes leads to the belief that the board of education shall provide for *all* the above items within its own budget

[6] See pp. 131-132.

and administration. The chief function of the board of education is to ensure that the community *does* provide them, under the agency equipped to render the most efficient and economical service. In many instances this means that the board of education justifiably increases its services to meet the impending needs of children; at other times the board of education assumes leadership in directing public opinion toward the assumption of specific health responsibilities by other institutions of government, voluntary agencies, or private enterprise.

Instruction, Services, and Treatment. How may a board of education decide whether it shall accept the responsibility for a given health activity or urge another organization to conduct it? The entire list of activities in a well-rounded community-health program may be classified as (1) *instruction*, (2) *services*, and (3) *treatment*. A suggested definition of these terms, together with a proposal concerning the school's responsibility in each of them, may assist the board of education in the adoption of school-health policies.

Health instruction aims to develop favorable attitudes, habits, and knowledge pertaining to individual, community, and societal health. The school and home assume the *direct* responsibility for health instruction, assisted *indirectly* by official, voluntary, and private agencies whose primary concern relates to services and treatment.

Health services pertain to the discovery of and protection against unhealthful conditions which may interfere with normal living among individuals and groups. The schools have the *primary* responsibility of stimulating effective health-services action through appropriate health instruction and of using these services as educational experiences in normal teaching situations. The schools have the *secondary* responsibility of conducting educational affairs in accordance with standards prescribed by legally constituted authority.

Thus the board of education may or may not assume a direct responsibility for all activities in the program of health services; some of them, or even most of them, may be assigned by proper authority to other health agencies in the community. Once the community has reached a decision on the responsibilities for health services to be assumed by the schools and the responsibilities belonging to other agencies, the board of education should conduct its affairs by administrative policies based upon the general principle described in the above paragraph.

Health treatment provides for the correction of defective organic and/or systemic body structure or function. The schools really have

no direct responsibility in treatment beyond first aid and care of sudden sickness at school. Health treatment is the responsibility of private health agencies or official and voluntary health and welfare organizations. The schools do have an *indirect* function in health treatment to encourage the application of appropriate treatment prescribed by proper authority outside the schools and to organize and conduct a school program that facilitates the treatment being rendered and prevents further aggravation of the existing unhealthful condition.

One of the most significant responsibilities of the board of education deals with effective liaison with the department of health. These two official organizations of government must work closely together and without friction to serve the best interests of all the people.

Board-of-education versus Board-of-health Control. In some districts all school-health activities operate under the board of education, with the public-health aspects of the program (largely the control of communicable diseases) conducted according to provisions approved by the health department. At the other extreme, the board of health assumes responsibility for all medical, dental, nursing, and sanitary services of the schools, with the educational authorities expected to cooperate with public-health personnel. In the most extreme cases, even the director or coordinator of health education in the schools functions under the department of health, although his school work should be supervised by the chief educational administrator or his duly appointed representative.

Irrespective of the type of organization, the program of health services may operate smoothly if sound administrative policies of cooperation are established, understood, and followed by both governmental agencies—the board of education and the department of health.

Usually certain regulatory factors from the state help to direct or formulate the relationships between the departments of education and health. State laws and regulations, for example, define the duties and responsibilities of health departments and school systems. The allocation of Federal and state funds also represents an important consideration in the extension of desirable health activities beyond the available financial resources of the community. Under ideal conditions these funds should be dispersed to the local governmental agency best equipped to render most efficient health services to the schools. Actually, legal provisions usually prevent the reallocation of funds from one type of official agency to another.

Able leaders employed by the board of education or board of health present strong reasons why the health-services program should be ad-

ministered by one or the other of these two organizations. Reasons favoring the department of education include the following: The schools exercise a more direct and continuous kind of supervision over children than does the board of health. The responsibility for sanitary equipment, surroundings, and hygienic arrangement of the school belongs to the education department, hence health services should come under similar jurisdiction. Education represents the primary function of the school and all health services have fundamental implications for education. Teachers and other school personnel work better with public-school authorities than with public-health authorities. Divided administrative responsibilities nearly always lead to undesirable friction and inefficiency. The schools are better able than another governmental agency to determine the health needs of children. Boards of education usually command a larger portion of the tax funds than boards of health and thus may provide better services. In terms of the best logical reasoning, the entire school-health program should be administered by the board of education.

Careful review of the problem, however, suggests several reasons why the health-services program rightfully belongs to the board of health: Children remain in school but a few hours each day, a prescribed number of weeks each year, and the years of compulsory attendance cover but a short period in the average life span—at all other times, and for all other ages, the health department assumes responsibility for public health. The control of communicable diseases, a reasonably large part of the school-health program, remains by law as a function of the board of health. The health department has a better knowledge and understanding of most community-health conditions than the education department. The public appropriates funds to the schools for educational activities, not for health services which rightfully belong to the health department. Duplication or overlapping of public services always proves inefficient and costly, hence the schools should confine themselves to health education in the form of health and safety instruction and healthful school living, with health services rendered by the officially designated department of public health.

Probably the best results obtain when the school-health program is directed by means of a clearly established joint responsibility or cooperative arrangement between the school and health departments. A joint committee of the two boards, responsible in turn to their respective parent bodies for official action, provides an intelligent way to handle this complex problem. In this way the guidance, leadership, and powers of both boards may be utilized effectively. Although an official

organization of government may not legally delegate a fixed responsibility to another governmental body, the two organizations may agree to employ an agent, called a director or supervisor of health education, to administer the school-health program under provisions established by the joint committee and adopted as policies by the parent groups. To ensure better teamwork several communities have arranged for the chief health officer to become a member of the board of education and for the school superintendent to serve on the local board of health.

For the health department to contend that all matters of health education belong to that department approximates the absurdity expressed by some school officials that only the board of education may rightfully assume responsibility for the education of all children and adults. The alert health department expresses concern over the professional abilities of those who conduct the school-health services in the same way that efficient school authorities feel concern over the educational outcomes derived from these services, irrespective of which agency actually employs the personnel. In matters of this kind the school and health authorities cannot properly avoid joint planning and joint responsibility.

Responsibility of the School Administrator. On the lowest level of executive practice, the chief school administrator merely carries out the routine provisions adopted by the board of education.[7] On the highest level of professional endeavor he, as the educational expert, advises and encourages the board to adopt policies aimed to improve the health of school children.

In fact the primary responsibility for the successful functioning of the school-health program rests with the administrator. He must accept this responsibility with an intelligent understanding of health problems, the aims and purposes of education, and the precise way in which effective health education contributes to the total program designed for the schools. He must provide the necessary resources in terms of personnel, equipment, facilities, and time within the school day. In planning the various activities that comprise the program and in the evaluation of their results, he must give forceful though democratic leadership.

Almost without exception the quality of the school-health program

[7] In this discussion administration refers primarily to "line" organization, wherein authority and responsibility pass directly from the board of education to the superintendent of schools, and thence to school principals. Thus, the term "administrator" refers to either the school superintendent (or his duly appointed assistant) or the building principal. The term "chief school administrator" always refers to the superintendent of schools who, in the final analysis, is responsible for the public-education program.

reflects the ability of the chief school administrator. Many efficient school superintendents have established reasonably good school-health programs, even when forced by circumstances to accept subordinate personnel of mediocre professional qualifications. On the other hand, few health programs achieve success without the sympathetic and wise direction of a strong and intelligent chief school administrator, irrespective of the qualifications of those employed actually to conduct the program. Observations clearly indicate the splendid results obtainable by the combination of an enlightened administration and efficient health personnel.

The Selection of a Competent School-health Administrator. The need becomes more and more evident for a competent school-health administrator.[8] Even though the board of education decides to establish an administrative organization which makes health education a component of physical education, someone should assume the specific responsibility for directing the school-health program.

The numerous aspects of the program, involving articulation of several subject-matter areas and services together with the coordination of many community activities emphasize the need for a school-health coordinator or supervisor with a broad background of preparation and experience. First of all he must be an educator who understands the basic principles associated with the proper conduct of schools and supports in theory and practice the tenets of a functional curriculum. Next to a broad preparation in general education comes the necessity for thorough preparation in health education, which includes understanding of the various activities conducted by the school and their precise contribution to complete education. Finally, the health supervisor or coordinator must appreciate the interrelationships—either stated or implied—between school health and activities normally sponsored by other official organizations, voluntary agencies, private enterprise, and professional associations. Obviously his ability to work with people and to command their respect and assistance deserves honorable mention.

In the well-organized school or college, the health expert assists the administration by recommending for adoption various policies affecting the welfare of the program, and in planning activities aimed to yield maximum results.[9]

[8] Doubtless the best results will accrue if the school-health administrator is appointed as a "staff" officer who serves as an adviser or consultant throughout the "line" organization to develop and improve the health program.

[9] Further discussion of this topic appears in Chap. 12, Preparation of School-health Personnel.

Cooperation with Outside Agencies. The supervisor or coordinator worthy of the name does not hesitate to utilize the various resources of the community to improve the school-health program. Constantly mindful of the growth and developmental needs of pupils, he seeks the best means of satisfying these needs.

The most difficult task concerns the adoption of policies by the board of education in accordance with an accepted definition and scope of *instruction*, *services*, and *treatment*. Within the framework of these definitions the schools may easily determine which functions rightfully belong to them and which ones should be assumed by other authority. Clear understanding of these responsibilities by the different agencies in the community—largely a matter of education—usually leads to wholesome cooperation among the organizations interested in health, to the mutual benefit of everyone in terms of economy and efficiency.

The time has passed, if it ever existed, when the schools alone can provide for all the needs and interests of youth. The home, as the unit of society, has many important functions to perform. The official organizations of public health and welfare may contribute many valuable health services to the school. The numerous voluntary agencies deserve a place in the planning and conduct of various activities. The private organizations and professional associations cannot be neglected without serious results. Cooperation is a necessity in the establishment of policies and in the conduct of most activities associated with the appropriate functioning of any school-health program.

Health Councils. The individual school or school system, desiring to establish a complete health program, may well give serious consideration to the selection of a group of persons best qualified by preparation and experience to exercise leadership in helping to organize the enterprise.[10] In general, the functions of these persons are to prepare a list of health objectives for the school or school system in view of the needs and interests of youth and in accordance with the exigencies of the local situation, outline the activities for which the school shall assume responsibility in accomplishing the objectives sought, recommend acceptance of these responsibilities by the appropriate educational authority, supervise the activities finally adopted by the board of education, maintain liaison relationships between the schools and other community organizations conducting similar or associated activities, and continu-

[10] Such groups work effectively in conjunction with the school-health administrator.

ously evaluate the success of the school program in terms of the avowed objectives.

Experience indicates that a school health council or school health committee represents the best type of organization to fulfill the obligations described above.

As a democratic and representative body, the school health council or committee provides an efficient and convenient means of determining and implementing the program. Obviously this organization has no authority except that vested in it by the board of education through the principal or superintendent, yet the council or committee usually enjoys the necessary freedom to conduct its affairs without undue administrative restrictions.

In a large school, the council may include the following: [11]

1. The school principal.
2. A physician (preferably the school medical adviser).
3. A nurse (preferably the school nurse).
4. A dentist (preferably the school dental adviser).
5. A dental hygienist (preferably the school dental hygienist).
6. The health educator, health counselor, or health coordinator.
7. A teacher representing each of the following areas:
   a. Physical education.
   b. Biological or other sciences.
   c. Education for the handicapped.
8. Classroom teachers (one with special interest in health problems).
9. A psychologist (preferably the school psychologist).
10. A member of the guidance staff interested in health problems.
11. A nutritionist (preferably the school food-service director).
12. The chief custodian.
13. Students (representing the student council or student body).
14. Parents (representing the parent-teacher association).
15. Representatives from the community health council (if one exists), or from official, voluntary, and private health agencies.

The best qualified person on the council should be appointed as the chairman by the principal or elected to this office by the membership. Usually the health educator, health counselor, or health coordinator serves as chairman.

[11] Adapted from "Suggested School Health Policies," 2d ed., National Committee on School Health Policies, p. 9. New York: Health Education Council, 1946.

Smaller schools need to reduce the membership enumerated above, although the council should approximate this list as nearly as possible. Rural schools may establish councils comprising the basic membership of the teacher, an interested parent, a representative from the medical profession, and the public-health nurse.

Each large school system may properly have a central health council composed of representatives from the various individual schools. The function of the central health council consists of giving leadership and guidance to local councils, articulating the health activities among the various schools, and maintaining coordinate relationships with community health agencies. Seldom will the central health council interfere with the actual operations of councils in the different buildings.

Perhaps the initial function of the school health council consists of establishing an *operating code* as a frame of reference within which the group plans and conducts the activities. The operating code will contain a statement explaining the responsibility of the school in health matters which affect the entire community.

Members of the school health council will recognize at once the interrelationships between instruction, services, and treatment. Both treatment and services contribute to the complete education of the child or adult. Whenever the physician visits the home to treat a patient or a nurse gives first-aid care to an injured child at school, the situation provides an educational experience for the recipient and perhaps for others. Likewise the services rendered by the school custodian in maintaining sanitary and attractive classrooms aid in the development of wholesome health attitudes and appreciations.

Summary

The school-health program encompasses a wide range of activities. Some school systems assume either major or minor responsibility for many of them; other school systems confine their efforts to a few. Several authorities in the field group the activities, for convenience, under such general headings as (1) health services, (2) healthful school living, (3) health and safety instruction, and sometimes (4) education of the handicapped (special education).

The rapid development of health education in recent years leaves many boards of education in a quandary with respect to the proper way to administer this program. Beset on all sides by pressure groups that attempt to stimulate lax boards into more effective action or to restrict ambitious boards from usurping activities belonging to other institutions of government, boards of education find school health to be one

issue wherein there is no generally accepted practice to guide them in the formulation of policies.

Misunderstanding sometimes leads to the belief that the board of education should provide for *all* school-health activities within its own budget and administration. The chief function of the board of education is to ensure that the community *does* provide the activities, under the agency best equipped to render efficient and economical service. In some instances this means that the board of education justifiably increases its services to meet the impending needs of children; at other times the board of education assumes leadership in directing public opinion toward the assumption of specific health responsibilities by other institutions of government, voluntary agencies, or private enterprise. In the final analysis the school-health program constitutes only a significant part of the larger and more comprehensive community-health program. Community health rather naturally falls into the three classifications of (1) *instruction*, (2) *services*, and (3) *treatment*.

Health instruction aims to develop favorable attitudes, habits, and knowledge pertaining to individual, community, and societal well-being. The school and home assume the *direct* responsibility for health instruction, assisted *indirectly* by official, voluntary, and private agencies whose primary concern relates to services and treatment.

Health services pertain to the discovery of and protection against unhealthful conditions which may interfere with normal living among individuals and groups. The schools have the *primary* responsibility of stimulating effective health-services action through apropriate health instruction and of using these services as educational experiences in normal teaching situations. The schools have the *secondary* responsibility of conducting educational affairs in accordance with standards prescribed by legally constituted authority.

Health treatment provides for the correction of defective organic and/or systemic body structure or function. The schools really have *no direct* responsibility in treatment beyond first aid and care of sudden sickness at school. Health treatment is the responsibility of private health agencies or official and voluntary health and welfare organizations. The schools do have an *indirect* function in health treatment to encourage the application of appropriate treatment prescribed by proper authority outside the schools and to organize and conduct a school program which facilitates the treatment being rendered and prevents further aggravation of the existing unhealthful condition.

In some districts all school-health activities operate under the board of education, with the public-health aspects of the program (largely

the control of communicable diseases) conducted according to provisions approved by the health department. At the other extreme, the board of health assumes responsibility for all medical, dental, nursing, and sanitary services of the schools, with the educational authorities expected to cooperate with public-health personnel. In the most extreme cases, even the director or coordinator of health education in the schools functions under the department of health, although his school work should be supervised by the chief educational administrator or his duly appointed representative. Irrespective of the type of organization, the program of health services may operate smoothly if sound administrative policies of cooperation are established, understood, and followed by both governmental agencies—the board of education and the department of health.

Able leaders employed by the board of education or board of health present strong reasons why the health-services program should be administered by one or the other of these two organizations. Probably the best results obtain when the program is directed by means of a clearly established joint responsibility or cooperative arrangement between the school and health departments.

The primary responsibility for the successful operation of the school-health program rests with educational administration. It must accept this responsibility with an intelligent understanding of health problems, the aims and purposes of education, and the precise way in which effective health education contributes to the total program designed for the schools. It must provide the necessary resources in terms of personnel, equipment, facilities, and time within the school day. The administration must give forceful though democratic leadership.

The numerous aspects of health in schools, involving articulation of several subject-matter areas and services, together with the cooperation of many community agencies, emphasize the need for a school-health coordinator or supervisor with a broad background of preparation and experience.

The educational institution desiring to establish a complete health program may well give serious consideration to the appointment of a health council or health committee composed of persons best qualified by preparation and experience to exercise leadership in helping to organize and conduct the enterprise. The effective health council or committee establishes the goals and activities needed, organizes the resources of the school to conduct the program, articulates the activities with those in the home and community, avoids unnecessary overlapping

and gaps between the schools and outside organizations, and continuously evaluates the success of the program in terms of the objectives sought.

Questions and Problems for Discussion

1. Why does health education appear to require more careful attention to effective planning than most other subjects or programs in the schools? Would this still be true if education were organized upon the basis of a functional curriculum?

2. For some years many experts in the field have agreed that health education in schools might be organized around the broad classifications of health services, healthful school living, and health and safety instruction. In recent years some administrators have included the education of the handicapped within this program. Does this represent sound administrative policy? From an administrative point of view, why not combine health services and healthful school living?

3. Review the definitions and functions of *health instruction*, *health services*, and *health treatment* pertaining to the total community-health program. In what respects do you agree or disagree with these statements?

4. Review the arguments for and against board of education versus board of health control of the health services in schools. Prepare an administrative policy that might be used by the state superintendent of schools and the state commissioner of health in adopting the proper regulations to meet this problem. Keep in mind the legal factors involved.

5. Assume that a local community desires to establish a joint responsibility between the departments of education and health in the administration of the school-health program. Describe a plan for effecting this type of organization and indicate the specific responsibilities of each institution of government.

6. Assume that you are a member of the board of education in a city of 75,000 to 100,000 population and the problem has arisen of selecting a superintendent of schools. Prepare a list of questions you would ask him relating to his appreciation and understanding of the school-health program and the manner in which it should be conducted.

7. Define a "competent school-health administrator." What activities would you include in his program? Prepare a basic code of ten items that would facilitate the effective conduct of his professional duties.

8. Assuming that you are a school-health administrator in a given local community, what kinds of assistance might you reasonably expect from the state education department? What assistance, in turn, has the state a right to expect from your administration?

9. In a reasonably large elementary school the principal has asked you to address a meeting of the faculty explaining why a health council seems desirable and how it might be organized. Outline a 15-minute talk for such an occasion.

10. Because of a rather serious outbreak of juvenile delinquency in the community, a responsible group of citizens has met with the board of education and demanded that the schools do something about the problem. The chief school administrator now directs the central health council to prepare a plan to meet the situation, such plan to be made known to parents and representative citizens. As the chairman of this council, how would you proceed?

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CHAPTER 6

HEALTH SERVICES AND GUIDANCE

Education and Services. The gradual though persistent evolution of education from the mere conquest of illiteracy to the enrichment of individual personality—from strict subject-matter emphasis to modern concepts of child growth and development—has brought with it marked changes in the services designed to facilitate the growth and developmental processes. No greater evidence of these changes is observable than in the program of health services and guidance.

The early public schools gave little attention to the health status of students or to the guidance of youth in the protection and promotion of physical and emotional welfare. The modern school encompasses all of these things. At one time the teacher assumed the sole responsibility for the education of youth; now many schools supplement classroom instruction with the services of physicians, dentists, psychiatrists or psychologists, nurses, dental hygienists, guidance counselors, nutrition experts, and others—all of whom contribute to the child's education.

The rapid development of health services naturally leads to conflicts in the minds of educators who administer the schools, among those who must pay for these services, and among those whose status may become restricted (parents and family physicians or dentists) by many of the activities that the schools propose to bring under their jurisdiction.

Three rather distinct points of view that are currently held may help to define the issues involved. (1) The concept of educating the "whole" individual toward a richer and fuller life means that the schools must be free to exercise control over the factors that affect normal growth and development. (2) If other agencies in the community fail to provide the necessary services, the schools should establish and maintain them. (3) The schools have a direct responsibility in matters defined as instructional, an indirect responsibility in strictly service activities, but no responsibility at all in affairs of treatment other than first aid to the

injured and provision for care in cases of sudden sickness occurring at school.[1]

All sorts of variations exist between those opinions mentioned above, which may partly explain why few school systems have carefully defined their responsibilities as to health policies and adopted procedures in accordance with these policies. In one school system, for example, which takes pride in the excellence of its administration, a full-time dentist gives free dental care, yet both the medical adviser in charge of health services (a physician) and the school superintendent stoutly declare that no treatment is prescribed. In terms of educational policy, does treatment of teeth differ from treatment of tonsils? As another example, a school principal recently exclaimed, "It's about time the board of health learned that it must cooperate better with the schools in the control of communicable diseases," when in reality the cooperation should extend precisely in the opposite direction. Such confusion need not continue if administrators and teachers establish and observe in their own schools accepted principles of health education.

Definition and Scope. Health services or health guidance and protection represent the combined efforts of physicians, dentists, nurses, teachers, psychologists, parents, and others to determine health status, to prevent disease, and to obtain the means of correcting remediable defects among students and school personnel.

The wave of interest in public education during the latter half of the nineteenth century brought with it compulsory-attendance laws, which flooded the schools with children from all economic levels. The crowded conditions in schools and rising morbidity rates from communicable diseases finally aroused public opinion to demand protective measures. Out of this situation arose medical inspection—the forerunner of all modern health services.

The larger cities first conceived the idea of school medical inspections to help control communicable diseases. But school physicians were unknown, hence public-health physicians were pressed into service. Later on, when the smaller communities decided to establish similar inspections, many of the struggling public-health organizations could not provide the personnel, and boards of education employed the medical inspectors who finally became the school physicians.

Thus one observes the force of tradition responsible for the con-

[1] A more complete definition and description of community-health instruction, health services, and health treatment appear on pp. 135-136.

tinuation of school physicians in most large cities as agents of boards of health, whereas the majority of these experts in smaller communities are employed by boards of education. Tradition further helps to explain the persistent controversy relative to board-of-education versus board-of-health control of school-health services.[2]

In due time "medical inspections" expanded into a larger program of activities, and the term "health service" came into common usage. Recently a respected minority group has advocated "health services" as a more descriptive term than "health service" because of the variety of items included in this field. Another group of experts proposes "health guidance," or "health guidance and protection," as the best title for the broad scope of the program. Those who sponsor this latest change contend that the term "health service" implied a more truly serviceable organization than did "medical inspection," and that "health guidance and protection" signifies greater educational opportunities than does "health service" or even "health services."

Terminology and definition are important only to the degree that they help to produce mutual understanding. Obviously "health services" describes the program more definitely than does "health service." In both of these terms the word "service" tends to separate the program from education, but this should not be construed as implying that a service makes little or no contribution to education. Efficient school organization utilizes every service to promote the avowed purposes of education. If teachers and parents associate "health guidance and protection" with education more easily than they do "health services," let us adopt the title best suited to the needs of children and which best describes the program offered.

The scope of activities in the health-services program includes periodic health examination or appraisal; observation and inspection for signs of defects and diseases; immunization and vaccination; follow-up procedures to secure correction of remediable defects; the use of family physicians and dentists, clinics, hospitals, special classes, and other agencies for the care and treatment of those in need of such services; and first aid and care of emergency sickness.

In the past the responsibility for health services usually resided in physicians, nurses, dentists, psychiatrists, and psychologists. Although these specialists continue to assume an important role, the teacher gradually becomes the focal point around which these other experts conduct their respective functions.

[2] The section, Board-of-education versus Board-of-health Control, pp. 136-138, describes this controversy.

Notwithstanding the fact that the chief function of health services lies outside the strictly "educational" activities of the school, these services provide rich opportunities for education which deserve full recognition and utilization. The health examination, for example, presents a learning experience wherein the child and his parents may either become aware of the importance of having a family physician as a faithful health counselor or they may lose respect for medical practice because the examining physician ignores obvious defects and treats the examinee as a cog in the machinery of mass clinical production. All health-services activities, moreover, contain essential elements for use in vitalizing and functionalizing classroom health instruction.

Periodic Health Examinations or Appraisals. Perhaps the most significant aspect of health services relates to the periodic health examination or appraisal of pupils. As given by physicians employed by the board of education or board of health and patterned in miniature after examinations conducted in private practice, this important part of health services, so rich in potential value, sometimes fails to achieve the objectives claimed for it. The examining physician, although highly trained in medical techniques, oftentimes lacks interest in the total school-health program and conducts the examination as an end in itself without regard to the avowed objectives of the school system. Few school administrators, on the other hand, appreciate the full significance of health examinations as essential and contributing factors to effective education. Of course there are exceptions among medical examiners and school officials, but these exceptions merely substantiate the general rule.

Modern theory in health education, not yet translated into common practice, would effect certain basic changes in the name and function of this health-services activity. The change in name would favor "health appraisal" rather than "health examination," and the purpose of "appraisal" would relate specifically to the needs and limitations of pupils in view of the *complete* educative process as determined by the school authorities instead of following the present stereotyped pattern of private medical practice which often has little in common with functional education.

This redirected emphasis places the classroom or homeroom teacher in a basic position of responsibility with other experts occupying a supporting role. The teacher needs special preparation for this important task.

The beginning teacher becomes immediately aware of differences in

mental abilities among the pupils in his classroom. Many teachers with years of experience may not fully realize that similar differences exist in physical abilities in terms of strength, endurance, freedom from defects, and general health status.

The well-trained educator understands the full significance of mind-body interrelationships and appreciates the absurdity of expecting optimum growth and development among pupils with remediable physical defects or among those who exemplify faulty nutrition, insufficient rest, or lowered vitality because of other unhealthful conditions. His sense of justice arouses concern at the unfairness of expecting pupils with remediable defects to compete on equal terms with pupils of normal health, and as a public-spirited citizen he decries the economic waste of permitting teachers to work with pupils dulled by improperly functioning organs and systems.

Health examinations or appraisals represent a unified effort to determine the health status of pupils and to define their health needs and problems. Besides the customary medical examinations, adequate health appraisals include health histories, teacher observations, screening tests, dental examinations, and psychological tests. Study of the data obtained from the health appraisal should be followed by adequate health counseling to insure the necessary care and treatment. Both appraisals and counseling contain rich elements for health instruction, always a coordinate program with the health services.

The incidence of remediable defects among the school children of this country presents a picture often characterized as gross neglect by persons interested in the welfare of youth. A country such as ours with high per capita wealth, relatively comfortable standards of living, great national resources, exemplary medical services, and exceptional opportunities for education might well be disturbed by a public-school population showing defectiveness in such degree as the following figures suggest: (1) teeth, 80 to 90 per cent; (2) malnutrition, 10 to 25 per cent; (3) tonsils, 14 to 16 per cent; (4) vision, 10 to 12 per cent; (5) nasal obstructions, 9 to 12 per cent; and (6) hearing, 3 to 7 per cent.

Physical defects may exercise a marked influence upon the physiological functions of the body and upon the psychological manifestations of the individual. Some authorities describe the possible physiological effects in the following terms: Toxic teeth and tonsils may allow substances to enter the system responsible for or associated with rheumatic fever, arthritis, heart disease, and indigestion. Malocclusion that interferes with proper mastication may impair nutrition, and traumatism

(due to an injury or wound) constitutes a major cause of pyorrhea. Nasal obstructions may lead to faulty chest development or affect the mucous membrane owing to the lack of warming and moistening inspired air. Defective hearing may cause unnecessary fatigue by the excessive burden placed upon the individual in maintaining mental and social contacts, or it may lead to deafness. Defective vision may result in eyestrain or blindness. Orthopedic defects oftentimes disturb the physiological functioning of various organs and systems.

The psychological effects of physical impairment are no less acute. Defects may contribute to tendencies of morbidness or may inhibit the desire to engage in social contacts and physical activities of a developmental nature.

Legislation Relating to Health Examinations. Many states have laws relating to the health examination of school children, although these enactments differ widely with respect to precise specifications. The efforts of numerous pressure groups often bring about compromise in authorizing the various features of health examinations. In some states only qualified doctors of medicine and dentistry may "examine" pupils for abnormal conditions; nurses and teachers are restricted to the use of the term "inspection." Likewise physicians and dentists may observe "symptoms" of disease, whereas nurses and teachers look for "signs." Frequently the lines of demarcation remain obscure between "examination" and "inspection" or "symptoms" and "signs."

In most states pressure groups so influence the enactment of legislation as to limit or distort the effectiveness of school-health examinations. Some states prohibit the removal of clothing for the examination. Some permit any licensed practitioner, besides qualified doctors of medicine, to conduct the examination. Oftentimes the law provides exemption for children whose parents request excuse from the periodic health appraisal. In fact, the majority of examinations now conducted in public schools may be characterized as inefficient, impractical, and wasteful of public funds.

Most authorities in health education favor some sort of legislation relating to the periodic examination of school children. Such legislation, however, deserves the mutual support of parents, educators, family physicians, and public-health officials. It should follow a broad program of general education designed to acquaint the public with the purpose, scope, conduct, and desired outcome of health examinations applied to school children.

Health Examinations and Development. The primary function of the school-health examination is to promote normal growth and development through determining the presence of remediable defects, acquainting parents or pupils with the unhealthful conditions associated with these defects, obtaining correction of defects whenever possible, and developing a scientific attitude among parents, teachers, and children toward conditions that may retard the optimum health and service of the individual.

The school concerned with the "whole" child has a distinct responsibility in all of these matters. Normal growth and development refer to physical, emotional, and social qualities quite as directly as to the child's intellectual attributes. The high percentage of pupils attending school with remediable defects, and the lowered vitality resulting from these defects, create a problem which education cannot ignore. That parents fail to appreciate the importance of defects, or neglect them, probably accounts for the large number of children in schools with diseased tonsils, malformed teeth, and other unhealthful conditions. Although the responsibility for correcting remediable defects actually belongs to the family or to another governmental agency, the school cannot escape its obligation to stimulate public opinion in the direction of ensuring the correction of such defects. Education must assume an important role in developing a scientific attitude toward conditions which may prevent the attainment of optimum health by the individual; in this respect, the examination contains essential elements for organized health instruction in schools as well as for other subjects or programs sponsored by educational authorities.

Health-examination Items. Keeping in mind that the scope of the health examination varies according to state laws, regulations established by boards of education, and techniques applied by individual examiners, most of these appraisals include the following items:

1. *Vision.* Degree of visual acuity; general condition of the eyes.
2. *Hearing.* Ability to hear the human voice; presence of wax or other unhealthful conditions.
3. *Teeth.* Presence of caries; malocclusion; proper or improper eruption.
4. *Tonsils.* Abnormality in size; inflammation and infection.
5. *Nasal passages.* Presence of obstruction, deviated septum, and adenoids.
6. *Glands.* Enlarged lymph nodes in the neck; proper or improper development.

7. *Skin.* Freedom from symptoms of disease; cleanliness; unhealthful conditions; vaccination marks.
8. *Heart.* Irregular action; rate; soundness of beat.
9. *Lungs.* Mobility of chest; condition of lobes.
10. *Abdomen.* Strength of the abdominal wall; shape; presence of hernia.
11. *Muscles.* Texture, size, and efficiency in performing normal life activities.
12. *Bones.* Size; efficiency; malformation.
13. *Posture.* Presence of abnormal anteroposterior or lateral curves; symmetry; body balance.
14. *Feet.* Structural and functional conditions of the arches; strength.
15. *Height and weight.* Status with reference to age and to normal growth and development of the individual.
16. *Nutrition.* Status with reference to weight, tissues, eating habits, and infections.
17. *Nervous system.* Emotional reactions to the examination and to affairs connected with the home and school.
18. *Puberty.* Stage of development and normality.
19. *Blood.* Pressure; signs of anemia.

Administrative Principles of Health Examinations. A surprising number of schools neglect to establish clearly defined administrative principles or policies governing the health examinations. This unfortunate situation often arises when school administrators are unfamiliar with approved health-education practices or when the responsibility is delegated to medical personnel who possess only rudimentary knowledge concerning the functions of modern education. Qualified authorities in health education generally agree that unless the health examination represents an integral part of the total school-health program, and thus contains essential elements for the complete education of youth, boards of education have no moral right to use public funds to finance this service.

Factors about which administrative principles or policies need to be established include the following:

1. *Educational Implications.* The health examination provides opportunities for both child and parent to understand better the significance of healthful living and to take appropriate action based upon that experience. Perhaps no other service organized by the schools has greater potential value in terms of practical and lasting education.

Sound administrative policy ensures an unhurried health examination, conducted in an atmosphere of privacy by a competent physician who

recognizes the educational implications of his important work. The hurried examination in which the medical examiner rushes children through the line most certainly defeats the educational purpose of creating a wholesome attitude toward family physicians as health advisers. Avoidance of situations in which the child or parent exhibit embarrassment or fear in the frank discussion of health problems would seem to demand some privacy. The alert physician uses the examination as a means of teaching health lessons that can be acquired so readily in no other way. At this time the qualified physician, nurse, and teacher take full advantage of the interest of youth in strength and vigor and relate these qualities to the correction of physical defects, a balanced program of physical activity, a wholesome diet, and sufficient sleep and rest. The mutual understanding and interest developed between the health experts, the teacher, parent, and child go a long way to ensure the educational success of the examination. Without this freedom of expression and mutual respect among those present at the examination, the educational values become decidedly limited if not entirely lost. To this end many authorities in health education recommend women physicians for the examination of young women in secondary schools and colleges.

2. *Preparation for the Examination.* A good school principal always insists that teachers, nurses, and school physicians prepare children for the health examination. The inferior school executive neglects this important matter in much the same way that he probably disregards other essential details of his office.

The natural reticence of some children in the presence of strangers, together with the general fear that human beings have of the unknown, suggests the value of preparing the child properly for the examination. For years educators have known that the attitude of the child toward a learning situation largely conditions the benefits he receives from the experience, and that the formation of proper attitudes often depends more on emotional influence than on scientific reason. Educators know, too, that scientific knowledge tends to dissipate fears and superstitions, and that an understanding of the truth helps in the development of correct attitudes.

Teachers have a responsible role in preparing the child for the examination. Some teachers use the organized classes in health instruction to discuss the purposes and conduct of health examinations. Other teachers employ the technique of giving screening tests, weighing and measuring the children and carefully recording the results as a means

of acquainting the class with the more thorough evaluation of health status to be made later by the physician, dentist, and others.

An excellent procedure involves a classroom demonstration of the examination. Here the teacher asks for volunteers who will help the physician to show other members of the class just how the examination is conducted. By selecting one or two children in excellent health, and assuming that the physician enters wholeheartedly into the demonstration, this procedure represents one of the best ways of enlisting pupil interest in the venture and of obtaining the educational values associated therewith. As the physician conducts each part of the examination he points out to the class the signs of normality and abnormality and explains to the group how health contributes to the happiness and service of everyone. A skillful teacher and a sympathetic physician can make the classroom demonstration one of the most effective means of developing wholesome attitudes toward the complete program of health education.

3. *The Presence of Parents at Examinations.* Most school authorities strive to establish an administrative policy whereby at least one parent accompanies the elementary-school child at the time of the health examination. Those who favor the plan emphasize the advantages in terms of gaining the cooperation of the home, school, and child in the correction of remediable defects, obtaining parental support for the entire school-health program, reassuring the child and overcoming fears by the presence of the parent, finding out about habits and practices of the child at home, heretofore unknown, that may point the way to redirected efforts and correction, serving as a natural means to bridge the usual gap that exists between the home and school, paving the way for appropriate relationships between the home and the family physician, and providing an excellent opportunity for the medical adviser to win the confidence of the child, family, and teacher. To ensure these advantages the school physician will give due emphasis to the health factors in which the child excels as well as to those items in need of correction.

The presence of parents can be justified if school authorities recognize the equality of educational and service values in the examination. School principals and physicians who emphasize only the service features of the examination contend that the presence of parents interferes with the work of the physician, permits the parent to ask a number of silly questions unrelated to the true function of the examination, provides the opportunity for the family to obtain a wealth of free medical advice, and encourages parents to meddle with school

affairs beyond the limits of their proper concern. Fortunately only a few school principals and physicians actually support this point of view, although the adoption of a working administrative policy favoring the presence of parents at the examination is conspicuous by its absence.

In secondary schools parents should not accompany the student to the examination. Here accepted standards of normal growth and development indicate that the student is a young adult who assumes the responsibility for his pursuits. The average secondary-school student does not want to be tied to his mother's apron strings and feels embarrassed by her presence at the examination. In secondary schools the man-to-man rapport between the medical adviser and the student normally yields the best results.

4. *The Function of Teachers at Examinations.* Contrary to accepted practice in many schools, the teacher should assume an important role in the examination, irrespective of the avowed predominance of educational or service values. His function prior to the examination itself involves adequate preparation of the child for the experience, screening tests of vision, hearing, posture, weighing and measuring, and others, determination of pupils most in need of medical attention if facilities do not provide for an examination of the entire class, and taking health histories which objectify the examination results.[3]

During the examination the well-trained teacher takes his place beside the doctor and nurse. As the central figure around which revolves the entire program of health services, the teacher reports observations relating to pupil habits, mannerisms, and signs of unusual ability or abnormality, records the examination results thus expediting procedure, learns to observe signs indicative of ill health or superior function, obtains clues which aid him in understanding better the behavior of individual pupils, and helps to develop among those present the spirit of cooperation so essential to the success of any program of health services. A member of the local parent-teacher association often takes charge of the classroom while the teacher assists with the examination of individual pupils.

After the examination the teacher uses the results obtained to enrich his health instruction, secure correction of all remediable defects, guide him in dealing with individual pupil personalities, and arrange reexaminations for those in need of this service.

[3] With limited additional professional preparation, teachers could render much greater assistance in noting signs of abnormality, thus improving and enriching both the programs of health services and health instruction.

5. *Frequency of Examinations.* No general agreement among health experts serves as a guide to the frequency of examinations for school children. In the early days of medical inspection, cursory examinations followed the outbreak of epidemics whenever they occurred. During the first 25 years of the present century several states passed laws requiring annual examinations of all public-school children.

Except in rare instances these prescribed annual examinations illustrate the fallacy of legislation preceding the tempo of education and the success of minority pressure groups in redirecting public opinion even though such an influence may conflict with the stated or implied purposes of adopted legislation.

In short, annual health examinations of public-school children have failed in most states even though the statutes remain in effect. Reasons for this failure may be attributed to the unwillingness of many communities to provide the necessary funds for competent physicians, dentists, and nurses; inferior qualifications of some persons who accept this type of work; inability or negligence of school administrators to organize the program effectively; disputes among state and local departments of government concerning the administration of the program; efforts of pressure groups composed of individuals who believe that such examinations usurp responsibilities rightfully belonging to the home and to private medical practice or interfere with religious freedom and the right of individuals to choose their preferred kind of practitioner; and several combinations of these factors.

At present two administrative policies enjoy rather general acceptance with reference to the frequency of school-health examinations. One policy provides for three examinations for the child during his attendance at public school: (1) upon entering the kindergarten or first grade; (2) at the fifth- or sixth-grade level when significant developmental problems often arise; and (3) during early adolescence or whenever the child decides to leave school. The other policy favors a thorough examination when the child enters school[4] with subsequent examinations whenever the nurse or teacher observes signs indicating the need for this service. This latter policy approves especially the examination of individual children with definite health problems rather than placing emphasis on a specific grade in school.

In the application of either policy described above, the school conducts an intense educational program to have more children examined

[4] The Summer Round-up, sponsored by the National Congress of Parents and Teachers, illustrates this type.

by the family physician. No sound reason prevents the school from using, for educational purposes, the data obtained by the family physician, and the obvious advantages of this plan suggest its wider emphasis. Even children of parents who cannot afford a private physician could be examined by personnel employed by one of the health or welfare agencies and the school informed of conditions found.

6. *Standardized Examinations.* For some years school authorities have urged experts in the health services to prepare a standardized examination that reveals data of comparative value and presents evaluations of health status meaningful to persons other than the physician who makes the initial entry on the health-record card. Physicians appear unable to agree on the symptoms that constitute functional abnormality in terms of enlarged or infected tonsils, flat feet, a defective heart, nasal obstructions, emotional instability, and other items; and even less agreement prevails when attempts are made to classify a given defect according to its degree of intensity.

Two major factors may help to explain the nature of the problem. For the most part the physician's examination represents a qualitative evaluation rather than a quantitative analysis, which many educators use in tests and measurements, and the physician has the right to exercise his individual judgment. Moreover, many of the items appearing on the average health-record card have limited educational value, irrespective of their clinical and diagnostic significance. No excuse, however, appears to justify the peculiar markings on the card, which the examining physician may understand but which remain unintelligible to everyone else, including the physician's successor.

The standardization of school records in general indicates the need for a standardized school-health examination. The success obtained in several large cities where qualified chief medical advisers for schools conduct in-service training for those who give the examination and interpret the results points the way toward a possible solution to this problem. Effective standardization of health examinations will command the best combined efforts of competent physicians, qualified health educators, and experienced persons in general education.

7. *Objections to Examinations.* Objections to school-health examinations usually stem from one of three sources: parental pride, religious beliefs, or private medical practice. No one can complain about the parental pride which prompted one mother to say to the school principal, "I am opposed to school-health examinations for children whose parents can afford a private physician; you tell us the kind of information you need, and his parents and the family doctor will furnish it."

Other parents, who seemingly object to the examination as a matter of principle but do nothing about taking the child to the family physician at periodic intervals, probably need a strong dose of adult education practically applied.

Those who oppose health examinations because of religious beliefs dislike a regulation that compels them to undergo an experience contrary to the teachings of the church. Most examination laws and regulations exclude such cases upon parental written request unless the case apparently entails conditions affecting the public health.

Objections to school-health examinations expressed by private physicians involve both the basic principle behind the movement and the unscientific manner in which such examinations frequently are given. These health experts believe thoroughly in examinations but contend that the responsibility for them rests with the family and the family physician in our present form of medical practice. Their professional ethics lead them to criticize, often severely, a system that belittles the bona fide health examination by permitting a school doctor to examine fifty to sixty strange children per hour and then to expect the family physician to act on information obtained by such unscientific means. Perhaps true professional ethics should prompt medical practitioners to speak even more openly concerning the unscientific methods used in many school-health examinations.

8. *Faults of Examinations.* Apart from the question of opposition to examinations as a matter of principle, several faults exist that deserve attention by educational administrators. Most of these faults center around the need for clear definition of purpose in terms of educational values and the lack of administrative policies and procedures to implement the defined purpose.

The most serious imperfection concerns the number of children examined per hour. The American Public Health Association recommends that a minimum of five minutes be allowed for each examination whereas present practice often reduces this minimum to one minute or less with fifty to seventy children passing before the physician within a 60-minute period. Consideration of the real educational function of the examination, and referring to the doctor only those children in need of medical observation, might help to increase the time the physician spends with each child and thus improve the personal relationships between examiner and examinee.

Another unsound practice often encountered in the examination relates to the location and facilities of the health-services room. Every centralized school should have such a room where the physician or

nurse may work with individual students in privacy and in well-equipped surroundings. The use of corridors, hallways, cloakrooms, basements, or even vacant classrooms for health examinations tends to defeat the true educational purpose of the experience.

The absence of standards for the examination often appears as an expressed weakness and probably deserves the combined attention of general educators, health educators, and physicians.

9. *General Practitioners versus Specialists.* School administrators often face the question, shall the board of education employ general practitioners or specialists to conduct the health examinations? Thus far conflicting points of view support both types of procedure. Those who favor the corps of specialists point out that the general practitioner cannot properly appraise health status because of the rapidly accumulating knowledge on most individual items of the examination. Those disposed toward the general practitioner contend that the schools do not require a high degree of specialized knowledge by the doctor to accomplish the educational purposes of the examination, the cost of specialists exceeds the amount appropriated for expenditure out of public tax funds, specialists are inclined to regard the child in terms of separate health items and to disregard total personality, and passing the child along from one physician to another increases rather than decreases the pupil's fear of doctors who should be regarded as friends and sound health counselors.

Proponents of each of the two points of view reach a partial compromise in the decision that schools desiring to employ a corps of specialists should appoint one physician to act as a health coordinator who summarizes the findings of the various specialists. Doubtless the years to come will witness greater acceptance of the term "school-health coordinator" to replace the older term of school physician, and the duties of this official will require specialized preparation in the precise educational functions associated with his office. He may or may not be a physician so long as he possesses the ability to coordinate the health activities of home, school, and community according to approved standards.

10. *School Physicians versus Family Physicians.* Confusion sometimes arises over the general principle in administration relating to authority and responsibility. Obviously the delegation of a responsibility presupposes the authority to carry out the stated or implied act, although the *modus operandi* may rightfully suggest utilization of one or more of several different techniques.

How does this apply to school physicians and family physicians?

Some state laws provide for the health examinations of school children by physicians employed by the board of education, and in many communities the board of education has adopted a regulation to the effect that school physicians shall conduct such examinations. The problem becomes further complicated by the adoption of legislation or regulations permitting the exclusion of children from school or from physical education or the withholding of working certificates, based upon official review of health status by the physician employed by the board of education.

Along with the increasing adoption of laws and regulations described above, health educators continue to emphasize the important place of family physicians in current society and the significance of the educational principle that a child learns to do by doing. Thus if the ultimate objective leads to recognizing the family physician as the chief health adviser, the school physician should not come between the child and the family doctor during the impressionable period of youth.

Throughout the years the problem of school physicians versus family physicians has continued to plague both the educators and physicians in private practice, oftentimes with concessions being proposed by one side and grudgingly accepted by the other. When the problem first became acute during the third decade of the present century, most educators seemed to believe that the school physician should conduct the health examinations and that his decision should take precedence over that of the family physician. At present a compromise appears in the statement, "If the parents of the child are unable or unwilling to have the examination made by the private physician, it must be conducted by a school physician."[5] Further modifications of the compromise relate to the consistent use of the school health-record card by family physicians and the examination of indigent cases by health and welfare agencies.

The years ahead point definitely toward wider utilization of the family physician in matters pertaining to school-health services except in those items controlled legally by official organizations of health and welfare. In the first place schools must assume an objective attitude in determining the kinds of information a physician may give that facilitate the educative processes. Once these kinds of information have been clearly defined, it appears reasonable to suggest that the schools might obtain essential health data from family physicians by the inauguration

[5] "Health Bulletin for Teachers," Vol. XIII, No. 5, p. 17. New York: Metropolitan Life Insurance Company, School Health Bureau–Welfare Division, 1942.

of a positive educational program that influences youth, parents, private practitioners, and the community as a whole.

Some years hence school laws and regulations that now specify the employment of examining physicians by the board of education may need repeal or modification along the lines indicated above. In the meantime, most laws and regulations permit sufficient flexibility in interpretation for schools to utilize increasingly the findings of family physicians in educational affairs. Several boards of education already have found that family physicians, at a nominal fee, comply with the law on the one hand and provide excellent services on the other in promoting the avowed purposes of the total school-health program.

11. *Types of School Physicians.* The types of physicians currently engaged in school work vary so widely as to defy appropriate classification. Like teachers and administrators, there are excellent school physicians and others with less ability.[6]

Many young doctors accept appointment as school physicians to ensure a steady income while building up a private practice. If they succeed in their ultimate objective, they soon leave the school to enjoy the more remunerative fruits of a private office and specialization; if they fail, they oftentimes remain with the school to render ineffective or indifferent service.

Another group of physicians, occasionally found in school work, represents those unable to compete in private practice because of personality difficulties or inferior professional preparation. From the relatively meager salary paid by most schools, they earn a living and do the best they can. They seldom appreciate the contributions of health services to the complete program of education, and pupils sometimes acquire improper attitudes concerning standard medical practices by association with such men—if the association affects them at all. Such physicians occupy a most unenviable position, being neither accepted by teachers as educators nor respected by practicing members of the profession they represent.

A third group includes physicians who give part-time service to the schools with their major emphasis on private practice. This arrangement has the advantage of bringing to the schools the latest developments in medical science, but the disadvantage of making school health secondary to more important professional affairs.

Several physicians have joined the schools after acquiring economic independence in other pursuits and because of a special interest in

[6] This discussion refers primarily to physicians in public schools.

health education. Almost without exception these men and women possess an enduring interest in child growth and development, readily adjust themselves to school routine, and render outstanding service to education.

Lastly, due credit belongs to those few young men and women, trained in medicine, who choose school health as a full-time profession. Some years ago a number of excellent physicians entered the combined fields of health education and physical education immediately upon completing internship, although in the past quarter century only an occasional doctor of medicine has chosen this work.[7] Education would profit by more persons of this type, assuming that they acquire professional competence in health education by further study in graduate schools of education and by experience in public health. Such persons, called medical advisers, could render effective service in assisting with the study of numerous contemporary health problems and in the standardization of procedures now employed. However, the financial outlay for medical preparation, the need for additional graduate study in education, the attractiveness of various other types of work available to the physician, the absence of professional prestige for doctors in school health, and the growing prominence of the family physician in health services—all of these factors suggest the improbability of any great number of competent young physicians choosing school health as a lifetime profession.

Health Histories. The individual health history for each child includes pertinent data on personal, hereditary, and environmental factors essential to appropriate health guidance. Closely associated with the health examination, and usually regarded as a part of it, the health history contains valuable information for use by parents, teachers, principals, guidance counselors, physicians, nurses, and welfare workers. When properly obtained and used, the health history focuses the attention of the home and school on individualized health problems, arouses the curiosity and interest of parents and children in these problems, and serves as a reminder to parents that certain defects need effective treatment.

School authorities, assisted by competent medical authority, must decide upon the items to be included in the health history. In the final analysis the health history will contain those items that contribute to the successful accomplishment of educational purposes and exclude

[7] At that period most of the programs were designated as physical education although they encompassed school health.

those with no direct bearing on the affairs of the school or presently available in other records. Approved record forms or folders now ensure readily available data for each child covering his academic, physical, and social endowments and limitations.

If the school decides to use a separate health-history record, the following items appear to be essential: (1) full name, date of birth, address, nationality, and religious preference; (2) name and occupation of parents or guardians; (3) names and addresses of medical and dental advisers; (4) personal history including evidences of normal and abnormal growth and development, diseases, accidents, operations, immunizations, special health tests (such as Schick or tuberculin), record of dental and medical examinations, school absences for health reasons, health habits, endurance, emotional stability, social behavior, and menstrual history of girls above eleven years of age; (5) family history, including social and economic status, number of brothers and sisters, age and cause of death among immediate relatives, susceptibility to diseases and accidents, and wholesomeness of family relationships; and (6) space for the signature of the person making the report and date. The collection of accurate data relating to emotional stability, social and economic status, and the wholesomeness of home relationships may require sound and sympathetic judgment to avoid offending the student or members of his immediate family.

Authorities recommend various techniques for obtaining the above data, although unanimous agreement favors collecting the information prior to the health examination and using it as objective evidence in appraising health status. Sometimes a questionnaire sent to the home proves satisfactory for elementary-school children if reliable parents complete the records. An interview with parents by the teacher or nurse not only provides objective evidence but often gives additional insight into the causes of abnormal child behavior. Students in secondary schools may furnish the information for their health history or fill out the record themselves as a valuable experience in organized health-education classes. The best results will obtain when parents and children enjoy relatively free expression of ideas in preparing the health history.

Health-examination Records. Health-history and health-examination records go hand in hand. As the name implies, the health-examination record contains the notations made by the physician or dentist at the time of the periodic health appraisal, together with the results obtained in the correction of remediable defects.

As previously described the health-examination record should con-

tain only those items of value in education and should not approximate the detail rightfully expected of physicians and dentists in private practice. Essentially it comprises an accurate, convenient, and up-to-date record for each student that is cumulative and progressive throughout the child's school experience; available to administrators, teachers, physicians, nurses, and counselors, with confidential findings kept confidential; filed in elementary classrooms and in secondary home rooms, central office, or guidance office; actually used, not merely filed; and transferred from school to school along with the pupil.

Dental Examinations. The importance of sound and attractive teeth in normal growth and development suggests that dentists rather than physicians give this part of the examination. And the same general principles apply to both physicians and dentists in placing increased responsibility on private practitioners in matters of examination and treatment.

Because of traditional fear of dentists, instilled in children by thoughtless adults or by caricatures, teachers have the task of preparing pupils for the dental examination. Attention to this problem by competent teachers and the techniques of modern dental practice have gone a long way to create a wholesome and friendly relationship between pupil and dentist.

Psychological Examinations. The separate historical development of psychological and health examinations probably accounts for their continuance as independent services in most schools. Gradually the point of view becomes increasingly evident that the combined efforts of psychologist and physician yield the best results in evaluating the health and personality status of pupils.

These examinations have much in common with respect to purpose and conduct. The psychologist suggests adjustment in programs for students with emotional or mental handicaps. Together with the physician, he may recommend a special class for pupils with certain defects. He reexamines individual students and interprets the results obtained upon request by teachers or principals.

Observation by Teachers and Nurses. In an excellent document Rogers states, "The *eyes* and *ears* of the teacher are the chief tools needed in the study of school children." [8] For years the school nurse

[8] J. F. Rogers, "What Every Teacher Should Know about the Physical Condition of Her Pupils," *Federal Security Agency Pamphlet* 68, p. 2. Washington: United States Office of Education, 1945.

has been the connecting link between pupil and doctor or dentist, between teacher or principal and examination personnel, between the home and school in problems affecting the health of school children, and between the home and school and community health or welfare agencies. Together, the teacher and nurse form a team which constitutes the backbone of most school-health programs.

Both teacher and nurse occupy strategic positions—the teacher, because he maintains almost unbroken contact with pupils in classroom, laboratory, gymnasium or playground, and thus may quickly observe signs of ill health or unusual behavior; the nurse, because of her accessibility when danger threatens and because her professional preparation inspires confidence among pupils and parents in health matters.

Wide variation in practice throughout the country prevents a clear delineation of functions between teachers and nurses with respect to the health-services program. In some communities the teacher may assume responsibilities normally belonging to the nurse. In the same or another community, the school nurse may perform services which only a physician or dentist would execute in a strict interpretation of the professional code. Generally speaking, teachers represent the front line in attacking problems of school health with nurses acting as liaison officers between education on the one hand and the professional activities of physicians and dentists on the other.

In a more precise sense, teachers and nurses observe signs relating to normal growth and development, conduct screening tests to validate these signs, refer suspicious cases to physician, dentist or psychologist for further examination, assist with these examinations, confer with parents and welfare agencies to ensure correction of remediable defects, and use the results of examinations for instructional purposes.

Some years ago elementary teachers conducted *morning health inspections* at the beginning of the school day to observe pupil cleanliness and signs of ill health. In recent years *continuous observation* has replaced the former morning health inspection. Oftentimes the nurse assists the teacher in interpreting peculiar signs or in reinforcing the decision which the teacher has made. Under the supervision of a qualified nurse, the teacher soon learns to discriminate between signs which indicate the need for early medical or dental attention and evidences of disorders correctable by appropriate school and home care.

What do teachers and nurses look for in these continuous observations? They look for the child who is shy, awkward, belligerent, or overstimulated. They look for signs of decayed teeth, mouth breathing, unusual pallor, breathlessness, malnutrition, defective vision and

hearing, skin eruptions, general nervousness, inattentiveness, fatigue, disinclination to play, frequent nosebleed, communicable diseases, poor posture, and many other indications of ill health. At the same time nurses and teachers give equal attention to the positive aspects of normal growth and development.

To further objectify their work, nurses and teachers conduct various screening tests prescribed by the administration. Such tests include periodic weighing and measuring of pupils, the Snellen charts and similar tests for visual acuity, and the audiometer to determine how well pupils hear the human voice. Students below standard on these tests are referred to proper authority for more thorough examination.

Before the regular health examination teachers and nurses obtain the health histories of students, invite parents to attend the examination of elementary pupils, and prepare children psychologically for their experience with the physician and dentist. At the time of the examination they arrange the proper scheduling of pupils, confer with the examiner about individual cases, assist younger pupils with the removal and putting on of clothing, and record the findings of the examiner. After the examination they notify parents of possible defects and attempt to have these defects corrected, interpret the findings to other teachers and to the principal, and use the examination experience as excellent material for health teaching.

Thus, nurses and teachers have a responsible place in the program of health services. The time devoted to preparing teachers for their part in this program, and the money spent for school nurses bring rich dividends to any community in terms of better schools and healthier and happier boys and girls.

Immunization and Vaccination. The rather common interchangeable use of these two terms suggests the need for clarification in the interests of effective health education. Dorland defines immunization as the process of rendering a subject immune or of becoming immune and vaccination as the art or process of vaccinating (vaccine, derived from vacca, and pertaining to cow) which produces immunization.[9] Obviously then, immunization represents the broader term and is applicable to all diseases for which science has discovered a protection by inoculation, whereas vaccination refers specifically to inoculations against smallpox. In common practice, however, vaccines are used to produce active immunity of various sorts.

[9] W. A. N. Dorland, "The American Illustrative Medical Dictionary," 17th ed. Philadelphia: W. B. Saunders Company, 1937.

Immunization has proved effective beyond all reasonable doubt for smallpox and diphtheria. Experimentation now under way may lead to similar protection against other diseases in the years ahead; already scientists report some progress with the Bacillus Calmette-Guérin inoculation procedure for tuberculosis.[10] Public-health authorities constantly seek new methods for immunizing youth against the common childhood diseases.

In these days when strong public-health organizations assume legal responsibility for the control of communicable diseases, the question often arises, why do the schools include immunization and vaccination as significant activities in the program of health services? The answer appears to reflect traditional practice. Long before organized public health attained the prominent position it now holds in American society, educators faced the need for adopting procedures designed to control the spread of smallpox among school children. Legislative enactments and regulations established by boards of education permitted the schools to require vaccination. These pronouncements led naturally to diphtheria immunization some years later, although active participation by schools in diphtheria immunization never reached the mandatory levels imposed for vaccination for smallpox.

The Boston School Committee voted compulsory vaccination in 1827, requiring all children to show evidence of such inoculation prior to school entrance.[11] Pressure groups elsewhere quickly followed Boston in passing the necessary legislation or regulation enabling boards of education either to give the vaccination or to insist upon it as a condition of admittance to the schools.

No doubt exists among informed persons concerning the importance of immunization against diphtheria and smallpox. In communities universally employing these protective measures, reported case rates have almost reached the vanishing point. An evidence of this truism occurred in New York City in 1947 when a person with smallpox suddenly arrived from a foreign country, and newspaper reports accounted for the temporary delay in controlling the spread of the

[10] Calmette and Guérin are the names of two Frenchmen responsible for the process. See especially M. I. Levine, "An Evaluation of the Use of BCG in the Prevention of Tuberculosis in Infants and Children," *American Journal of Public Health*, Vol. 37, No. 9, pp. 1089-1096, September, 1947.

[11] C. V. Langton, "Orientation in School Health," p. 107. New York: Harper & Brothers, 1941.

Note: In Massachusetts "school committees" represent the proper designation for "boards of education."

disease by the fact that many younger physicians never had observed an active case and were unfamiliar with the precise symptoms.[12]

The real crux of the problem, however, relates to the responsibility for immunizations. To what degree does the responsibility belong to the board of education, board of health, or to family physicians? As previously mentioned, the board of education in several states has the authority to impose regulations compelling vaccination among school children. On the other hand, most states direct the board of health to control communicable diseases, authorizing this board to enforce immunization in case of an emergency. Principles underlying private medical practice favor the family physician as the person who should give inoculations to those children and adults who regard him as their medical adviser. Among indigent cases or when an epidemic threatens, the board of health directs the proper authority to administer immunizations. In any case, the board of health usually furnishes the necessary serums.

What role in the program of immunization rightfully belongs to the schools? Two significant functions appear evident: (1) to cooperate with private physicians and the board of health in the conduct of their respective activities, and (2) to educate children and adults concerning the values of immunizations.

Cooperation means giving support to programs sponsored by family physicians and by the board of health. If they request the schools to conduct an immunization program, or even to actually give the inoculations for reasons of convenience and economy, it should be done. The stimulating force, however, lies outside the schools. When the schools pass regulations requiring vaccinations without considering the desires of family physicians and the health department, such a procedure often leads to friction if not counteraction.

Education plays an important part in arousing a public consciousness to the benefits of immunology. The fact that smallpox and diphtheria still exist may be the result of faulty education that fails to emphasize the true values of appropriate preventive measures. The story of antibodies and antitoxin represents one of the great miracles of nature and,

[12] The corollary of this example involves the significance of education. The citizens of New York City had learned the values of vaccination and stormed the offices of private physicians and stations designated by the Board of Health, refusing to return to their homes when the supply of serum became exhausted. Years ago, only the police might have succeeded in rounding up a few grumbling citizens for vaccination, with the general public remaining at home and complaining about intrusion on private rights.

when properly taught to children, thrills youth with the spirit of adventure. Adult-education classes will find in immunology a practical and fascinating subject that lends itself readily to the use of various teaching aids in the form of the public press, radio, motion pictures, and printed materials. The future progress of immunization rests largely with the development of science which unveils the secrets of protection against specific diseases and the force of education which encourages the general public to make use of these scientific discoveries.

Follow-up Services. After the periodic health appraisal of school children, and in conjunction with the observations by teachers and nurses, the school provides some form of follow-up services to facilitate the correction of unhealthful conditions disclosed. Contrary to apparent belief, in a few school systems, as exemplified by actual practice, the follow-up procedures contain educational opportunities of paramount significance.

Both teachers and nurses participate in the follow-up services, assisted at times by school-health counselors. These officials explain to parents of elementary-school children the nature of remediable defects that may be present and urge family cooperation in securing further examination and appropriate corrective procedures. In secondary schools the conferences may include both the student and his parents or involve only the student if his development indicates personal responsibility for the unhealthful condition observed. Teachers in both elementary and secondary schools need sufficient time in their daily and weekly schedules to conduct these conferences with parents and students.

The educational features of the follow-up program deserve special attention since the schools attempt neither to actually correct defects nor to recommend specific treatment. In all follow-up cases school authorities suggest that the family physician or dentist conduct further examinations or recommend appropriate treatment. The official welfare agency or a voluntary organization properly renders treatment for indigent cases. The school first seeks to establish friendly and cooperative relationships with the child and his family by emphasizing the positive appraisal findings before tactfully and sincerely presenting the health problems. School officials understand that unhealthful conditions observed in children oftentimes indicate similar problems among other members of the family. Sometimes the nurse visits the home to discuss these problems with the family, although the parent

may come to the school where a conference with the teacher, principal, and health counselor usually ensures the best follow-up results. School conferences have the additional value of increasing prestige for the educational system. The efficient teacher always uses the follow-up items for purposes of health instruction.

The teacher occupies a unique position in the follow-up program, both with respect to conferences with parents at school as described above and in assisting the child with the reconciliation of his health problems. The child with defective vision may need to change his seat to a position where he can see the blackboard or to receive instruction in the correct use of glasses. The deafened youth may profit by a position in the classroom that better enables him to hear or to adjust more readily to school experiences. In the final analysis the teacher represents the difference between success and mediocrity in the organization and conduct of special classes for underprivileged children.

In well-organized school systems the nurse carries the brunt of responsibility in maintaining relationships between the family and school. She follows the case to the home, advises parents concerning the results of the school-health appraisal, and checks on remedial measures currently in progress—from the standpoint of both school and patient. Because of her professional background she easily gains the confidence of parents and children and further, she has ready access to family physicians, the health and welfare departments, voluntary health organizations, clinics, and hospitals.

Community Resources for Correcting Defects. The natural resources of America, together with the adventurous character of its people, are largely responsible for the high standards of social progress found in this country. America provides a rich soil for the development of free enterprise and social institutions designed to improve the lives of people. Examples of these resources appear in commerce, industry, agriculture, education, and health.

Education rightly serves the cause of social progress by acquainting people with the better things in life and in stimulating interest toward the possession of these riches. Along with the schools, printed materials, radios, motion pictures, and other media contribute to complete education.

The kind of organized education that goes on in schools needs more effective direction in arousing public opinion to demand improved facilities for correcting the health defects of mankind. Of course an ounce of prevention is worth a pound of cure, but defects will occur

and these deserve immediate and appropriate attention. The huge percentage of school children showing evidence of one or more remediable defects indicates a similar degree of unfitness among the general population, and the relatively small percentage of remediable-defect correction among pupils in public schools suggests that most adults fail to live up to their health potentialities.

The schools belong to the people who support education, but any kind of education worthy of the name will attempt to enrich the lives of persons in the community. This precept of dualistic philosophy, applied to the correction of remediable health defects, means that the citizens of a community should decide upon the technique of correction desired with the schools helping to shape public opinion and to stimulate action once a decision has been reached.

A community may decide that basic responsibility for the correction of remediable defects lies with the family, except that indigent cases shall receive treatment in public clinics and hospitals. The schools, then, best perform their function by disseminating knowledge, developing attitudes, and obtaining action among children and adults in accomplishing the avowed purpose. In the years ahead progressive communities may give as serious consideration to provisions for clinics and hospitals as they now give to schools and churches.

The Summer Round-up, sponsored by the National Congress of Parents and Teachers, represents a splendid example set by a voluntary agency to ensure freedom from physical defects among kindergarten and first-grade children. Entrance to school marks a distinct epoch in the minds of both children and parents, an epoch that most schools might use with greater profit in the health education of the entire community. In fact the active utilization of community resources for the correction of remediable defects among children often arouses favorable public attention to the complete school-health program.

An excellent illustration of coordinated community resources in the correction of remediable dental defects now operates in Springfield, Mass. The experiment started as a joint enterprise between the official, voluntary, and private agencies in the community. These agencies agreed upon a plan of action. The schools instructed children in the deleterious effects of dental defects, the need for early correction of unhealthful conditions, and the importance of having a family dentist. Parents received similar instruction in adult-education classes, through the parent-teacher associations, and at various public gatherings. Dentists became interested in the plan by discussions at regular meetings of their local professional association.

The essentials of the Springfield program follow: (1) parents and children select the dentist of their choice; (2) dentists conduct a free initial examination and indicate to the patient and his parents the nature of defects encountered and the approximate cost of corrective procedures; (3) the dentist, patient, and parents discuss the problem of correction and agree, if possible, on the method of payment; (4) in case the parent and dentist cannot agree, the problem may be referred to the schools by either party; (5) if the problem involves ability of the family to pay for recommended treatment, the case is referred to the official social-welfare agency for appropriate action; (6) the schools rightfully refuse to render treatment or to act as a welfare agency; (7) classroom teachers check on pupils to be sure they have visited the family dentists; (8) pupils may keep dental appointments on school time, if necessary, without being marked absent; and (9) finally, the child brings to school a statement from the dentist indicating that all remediable defects have been corrected.

The Springfield program denotes a kind of organization, applied to the utilization of community resources for the correction of defects, that merits commendation. Communities might extend the plan to encompass other types of defects. The sound educational principles observed herein provide an excellent basis not only for treatment where the need arises but also for general health education among all citizens served by the schools.

First Aid and Care of Sudden Sickness. Provisions for first aid and care of sudden sickness symbolize the only "treatment" justifiably belonging to the schools. Any well-organized program of health education will include these services.

The American Red Cross furnishes standardized instruction in first aid and publishes a book in this field for use by teachers and nurses. All teachers should receive this instruction, preferably before graduating from an approved college of education or as a part of their program of in-service preparation. Nurses obtain practice and skill in first-aid procedures as part of their hospital training. The school principal will designate a qualified nurse or teacher and at least one substitute as the persons responsible for first aid and equip a centrally located cabinet with the necessary supplies. Brief refresher courses from time to time help to keep the assigned personnel familiar with the newer techniques of first aid.

Every school faces the unfortunate problem of occasional sudden illness among children or employed personnel, and provisions for this

emergency denote accepted administrative practice. The person in charge of first aid also performs the duties associated with care of sudden sickness, since the treatment ethically given falls within the standards prescribed by the American Red Cross.

Besides the immediate care given at school, educational authorities must assume the responsibility of notifying parents and, in numerous instances, of transporting pupils to their homes. A clearly defined set of administrative procedures for the care of emergency cases helps to avoid confusion and to encourage efficiency. These procedures, approved by the board of education, should observe legal provisions relating to liability in the use of private automobiles for transportation purposes.

Parents oftentimes need guidance from the school authorities to appropriate sources of professional treatment. Usually such recommendations direct parents to family physicians or to the local medical society; never does the school support a specific doctor nor a precise form of treatment.

The curiosity aroused by emergencies provides a rich and timely source for health instruction, both for the individual concerned and for groups.

Health Rooms and Rest Rooms. Most modern school buildings contain a health suite, which includes a health room, rest rooms (one each for boys and girls), and offices for the health-services personnel. The health room is used for regular and special examinations, conferences with parents or pupils, and as a first-aid room. As indispensable as classrooms and laboratories, the health room requires privacy and an attractive appearance. A light, well-ventilated, orderly, and properly furnished health room inspires confidence in the person conducting the examination or special observation and creates respect for the health-education program. A length or width of at least 22 feet permits standard screening tests for visual acuity.

Rest rooms need good ventilation and subdued light. Equipped with cots and warm blankets and separated from the health room by toilet and lavatory facilities, these rest rooms remain in use only during a supervised emergency.

Health Services for Employed School Personnel. As a fundamental principle, teachers and other school employees should enjoy all the health services made available to children, and the administration of these services should follow the same general pattern. Thus if the

school requires evidence of health examinations among children, teachers and custodians will have similar examinations; if the school expects pupils to have their remediable defects corrected, teachers and principals will have their defects corrected; and if the school excludes pupils with signs of communicable disease, principals and teachers will leave the school when they show similar signs.

For many years industrial and business concerns have profitably conducted adequate health-service programs for employees. School employees are subject to the customary hazards to which their sedentary neighbors in business and industry are exposed. An additional feature, however, enters into the comparison: industry finds that an efficient program of health services tends to increase production; the schools need sound teachers to improve the quality of instruction, but equally significant is the quality of the learning processes wherein children profit by the example of persons associated with them. No teacher should begin his professional career without a thorough health examination and the correction of all remediable defects.

Some of the essential features of health services for school employees include examination as a condition of employment with subsequent examinations at periodic intervals, especially after return to school following absence because of illness; correction of all remediable defects; sick leaves and insurance to protect mental and physical health; tenure and retirement features; a sanitary and healthful school environment; and sufficient salary to ensure an adequate standard of living, together with recreation and additional preparation.

Responsibility for School-health Services. School administrators face a most difficult problem in the organization and conduct of effective health services. In brief, this program relates to the determination of pupil-health needs, and the establishment of justifiable techniques to meet these needs. Originally conceived as medical inspection, this program has passed through numerous evolutionary titles, including health examinations, health supervision, and health service, and now seems delicately poised between acceptance as health services and health guidance and protection. Each of these evolutionary titles leaves its mark of distinction, sometimes clarifying controversial issues, at other times kindling just rivalry between exponents of different health-education philosophies.

Irrespective of the title used to designate the program, judgment must rest upon the results obtained—what the procedures do for the

individual child and their effect on the school and home to improve health.

Considerable evidence points to misguided direction in these matters. The prevailing notion that schools should determine defects while parents assume the responsibility for the correction of these defects has led to a great deal of examining but dubious results in terms of defects corrected. Questionable values obtain if defects are discovered and announced year after year but few corrections follow. The desirability of immunizations remains an obscure and abstract health lesson unless the community makes possible the procedures necessary to implement the instruction. Has the program of health examinations gone too far ahead of the follow-up program? Does the health instruction designed for children in schools so eclipse the health-services program which homes and community are willing to accept that neither children nor parents observe the relationship between one program and the other? These constitute some of the problems which educators must face.

In organized games and sports the follow-through gives evidence of coordination and efficiency. In health services, this follow-through symbolizes the school administrator who efficiently coordinates the activities of his various staff workers into an integrated program that continuously moves in the direction of accomplishing the avowed purposes regarded by the community as properly belonging to the province of education.

Summary

Three rather distinct points of view prevail with reference to the school's responsibility for the health services: (1) educating the "whole" child toward a richer and fuller life means that the schools must be free to exercise control over those services which affect normal growth and development; (2) if other agencies in the community fail to provide the necessary services, the schools should establish and maintain them; and (3) the schools have a direct responsibility in matters defined as instructional, an indirect responsibility in strictly service activities, but no responsibility at all in affairs of treatment beyond first aid and care of sudden sickness.

Terminology in this area has passed through various stages of evolution, beginning with medical inspection, moving on to health examinations, enlarging into health service, now being regarded as health services or health services and guidance, and facing the future possibility of becoming health guidance and protection.

The scope of health services encompasses (1) periodic health examinations or appraisals; (2) observations and inspections for signs of defects and diseases; (3) immunization and vaccination; (4) follow-up procedures to secure the correction of remediable defects; (5) the use of family physicians, dentists, clinics, hospitals, and other agencies for the care and treatment of those in need of such services; and (6) first aid and care of sudden illness.

Trends predict a change in name and purpose for the health examination with the name changed to "health appraisal" and the purpose related specifically to the needs and limitations of pupils with respect to the complete educational program. These changes place in a basic position of responsibility the classroom or home-room teacher, around whom would revolve the activities performed by other health-services personnel. Another trend points in the direction of increased emphasis on examinations conducted by family physicians, with the schools making use of the results for educational purposes.

Teachers and nurses conduct most of the follow-up services, with further examination of suspicious conditions being made by family physicians and dentists. The official welfare agency or a voluntary agency properly takes charge of treatment for indigent cases, since signs of defectiveness observed in children probably relate to improper conditions in the home.

As a basic principle teachers and other school employees should make use of all the health services available to children, and the administration of these services should follow the same general pattern prescribed for students.

All health-services activities possess rich educational values, which should not escape the teacher or principal bent upon utilizing the life experiences of pupils for instructional purposes.

The health services closely relate to education of the handicapped, a discussion of which follows in the next chapter.

Questions and Problems for Discussion

1. Select one stage in the development of the health services, and describe it in terms of the prevailing educational philosophy at that time. What factors or forces led to the stage selected? What was responsible for the succeeding change?

2. Why did medical inspections start in the large cities rather than in the smaller communities? Does the basic principle behind your answer hold true for all educational developments? How should this affect proposed plans for increased Federal and state support for public education?

3. What changes in health-examination procedures might improve the educational features of this service? Should teachers and nurses be given a more prominent responsibility in them? How about family physicians and dentists? Is a board of education morally justified in employing school physicians and then adopting a policy that these physicians shall neither diagnose the abnormal conditions found nor treat them?

4. What are the educational implications of the statement "physical defects may exercise a marked influence upon the physiological functions of the body and upon the psychological manifestations of the individual"? Formulate a principle of health education that embodies your answer to the question.

5. List the chief objections frequently expressed about health examinations. Suppose you were conferring with the principal objector in each case, how would you deal with his point of view? As a health educator, what recommendation would you make to your superior officer on each of the objections raised?

6. Quite obviously, the follow-up programs and the correction of remediable defects have not kept pace with the determination of defects by examinations and observations. What factors are responsible for this deficiency? What practical steps might be taken to improve these conditions? What is the function of education in this matter?

7. Describe a practical plan for rendering first aid and caring for sudden sickness in a centralized school, located in a rural area, and with an enrollment of 1,200 pupils from the first grade through senior high school. Keep in mind the services to be rendered, by whom, notification of parents, and transportation of the injured or ill person to his home or other designated place.

8. What are the essential differences between health services in public schools and health services in colleges? Does your answer indicate the need for two basic principles, one for the public schools and another for colleges? State your point of view, either as one overall principle or as two separate principles.

9. Do the health services, as conducted in schools and colleges, point in the direction of some form of organized medicine? What elements in practice indicate the affirmative? What factors suggest the negative?

10. If you could abolish all current practices in the health services and start from the beginning, what kind of plan would you recommend? Keep in mind that one of the chief criticisms of current practices relates to the negative approach, *i.e.*, emphasis on disease and defectiveness rather than on superior qualities that the student may possess.

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CHAPTER 7

EDUCATION OF THE HANDICAPPED

The Handicapped, Exceptional, or Special Student. Education of the handicapped refers primarily to pupils who, because of advanced degrees of abnormality, require special classes or schools for appropriate instruction. Children with lesser disabilities receive instruction in regular classes or schools, where qualified teachers understand the principles of individual differences among pupils and make due allowances for them.

Until recently many school authorities preferred to organize the education of the handicapped as a separate department of instruction. The present trend to regard this program as a part of health education appears justifiable from the standpoint of both function and personnel. Most classes or schools for the handicapped originate because of physical limitations among students and, with few exceptions, the persons who have charge of these students need a rich background in health education.

Like most programs in the American public schools, education of the handicapped began under the auspices of voluntary organizations. During the early decades of the present century state laws gradually enabled boards of education to use public funds for the special education of crippled children. Close in the wake of special classes and schools for orthopedic cases, similar facilities appeared for other types of handicapped pupils. Sometimes these laws reflect confusion between basic principles of education and treatment and enable local boards of education to spend public funds for the alleviation of physical defects as well as for the proper education of handicapped children. Not all states have passed laws relating to the education of handicapped pupils, although the trends point toward an increasing number of special classes and special schools financed jointly out of Federal, state, and local funds.

General opinion among educators seems to favor opportunities in special schools or classes for the seriously handicapped and to regard such opportunities as definitely contributing to the improved health

and welfare of school children. At least the professional literature on the subject has succeeded in arousing the public emotions to a point where the often repeated statement that no school program is complete without adequate provisions for the handicapped goes largely unchallenged.

The emotional appeal of a situation may stir a community or a state to action when mere logic leaves the people unmoved. Is it possible that excessive human effort and public wealth frequently go into the elaborate school buildings and equipment provided for the handicapped, in view of the inferior biological material benefited by these facilities? At the other extreme appear those children endowed by nature with superior abilities. Upon the shoulders of these latter children rests the future responsibility of American leadership, yet public opinion deals sparingly with them in terms of providing educational opportunities comparable in quality with classes and schools for the handicapped.

Perhaps a few enlightened school districts are moving in the right direction by establishing "departments for the exceptional" which include both the handicapped and the gifted. These departments provide appropriate educational opportunities for extreme deviates at both ends of the biological and intellectual scale. Despite attempts to provide equivalent facilities for both groups, however, the handicapped continue to receive the lion's share of public sympathy and support.

Doubtless the relative newness of this program accounts for the changing points of view concerning its range and scope. Originally established as "education for the handicapped," with an expanding list of defects for which special classes or schools seemed appropriate, this program later became "education of the exceptional" in several school districts where attempts were made to include in the program both the handicapped and the gifted. More recently the title has changed again, and the term "special education" receives the sanction of many experts in this particular field, with the focus of attention returning to children handicapped physically, mentally, or socially.

Administrative Principles. Because of the limited attention given thus far to the implications of "exceptional," the discussion that follows relates principally to the handicapped.

Generally speaking the policies and procedures adopted depend upon the efforts of interested individuals both within and outside of the schools and upon the funds available to support the enterprise. Severe cases may require special classes or even special schools, although the education of the handicapped should approximate as nearly as expedient

the activities prescribed for normal children. Sound administrative policy recognizes that slight deviations from normal may be expected among any group of pupils and that such cases belong in regular schools under the intelligent guidance of classroom teachers who appreciate the significance of individual differences. The same administrative policy recognizes that certain atypical children need special classes or schools to insure the optimum development for these children and to protect others against the retarding educational influences of constant association with pupils of inferior potentialities.

Proposed Classification. No single plan of classification for the handicapped enjoys universal acceptance. The following classification suggests a convenient and functional organization of general atypical cases: (1) the physically handicapped, (2) the mentally handicapped, and (3) the socially handicapped.

Further classification indicates the relationship existing between this program and health education. Under the physically handicapped appear eight subdivisions: deaf and hard of hearing, blind and partially sighted, crippled and posture defective, speech defective, malnourished, cardiac defective, tubercular, and epileptics. The mentally handicapped may be subdivided into two groups: those with low intelligence, and the emotionally atypical. The socially handicapped include those needing custodial care, rehabilitation, preventive care, and developmental opportunities.

Deaf and Hard of Hearing. Approximately one public-school child out of every 1,500 needs special attention because of deafness, and one in 300 is hard of hearing. These numbers vary depending upon the economic status of the community and the effectiveness of its health program. Every teacher should know how to detect the signs of deafness and be aware of the progress made in helping the deafened child to take his regular place in society.

The early noting by the teacher of signs of deafness, followed by further examination and appropriate education, usually brings excellent results. The alert teacher will observe signs of strained attention or apparent inattention, turning one ear in the direction of sound, requesting repetition of statements made, rubbing the ear or picking at it, and the peculiar pitch of the student's voice—often low. Such cases should be referred to the designated authority for careful examination. Meanwhile the teacher may render effective aid by seating the child in a favorable location and by protecting him against emotional disturbances and eyestrain which occasionally grow out of his basic afflic-

tion. The audiometer screening test or school-health examination often reveals supporting data for the teacher's observations, although only a special examination by a skilled physician should determine the nature of care and treatment to be recommended.

Fig. 12. Visible speech.

Perfunctory examinations usually fail to detect partial deafness. The examinee may feel the vibrations and react to them but give an incorrect response. At such times the untrained examiner may regard the child as stubborn or mentally retarded. Deafness or a partially deafened condition has a marked effect on intellectual development, and no child should be classified as slow or feeble-minded without having both his hearing and intelligence properly examined.

If competent authority finds the child to be deaf or hard of hearing and in need of special care, he may be sent to a special school or class for the deaf, assigned to a special class for the hard of hearing, or kept in his regular class with the necessary adjustments made in his program. The decision with respect to the course to follow depends upon a number of associated factors.

Most states and some local districts maintain schools for the deaf. State schools afford excellent opportunities for rural children who cannot obtain the necessary educational advantages near home, those who experience difficulty in learning to speak, children whose home conditions restrict development, and the socially maladjusted or mentally deficient.

Special classes for the deaf or hard of hearing require a teacher trained for this type of work. A satisfactory class for the deaf enrolls not more than ten or twelve pupils. Lip reading and teaching the child to speak supplant the old sign language. The hard of hearing need instruction in the use of prescribed acoustic or hearing aids. With proper instruction at an early age, the average deaf or hard of hearing person learns to take his place in society as a well-adjusted and productive citizen.

Deafened pupils have the same interests in motor activities as normal children, although disturbances in the semicircular canals often interfere with the sense of balance. A wide range of physical-education activities, especially athletics, dancing, tumbling, and aquatics, contributes to the bodily development and social adjustment of such pupils.

Blind and Partially Sighted. The total program within the area of conservation of vision extends from the education of the blind person on the one hand to the procedures adopted by the school to protect the eyesight of normal children. Further delineation suggests four groups, each deserving appropriate attention: the blind, the partially sighted, those with impaired vision, and the normal.

During the present century the schools have made great strides in improving the educational opportunities for each of the above four groups. The classroom teacher holds the key position in recognizing early signs of eye defectiveness and upon early detection, followed by appropriate care, largely depends the success of the sight-conservation program. The totally blind child seldom reaches the regular classroom (his defect is all too obvious), but pupils with varying degrees of im-

paired vision may appear at any time and in any grade. They may enter the kindergarten or first grade with defects unnoticed at home or develop pathological eye conditions during a given year. The observant teacher notices the tendencies of pupils to hold written or printed materials close to, or far away from, the eyes; guide the eyes with a finger pointed toward the written or printed word; frequently rub, blink, or dry the eyes; contort the face while reading; be inattentive; show red or inflamed eyes; or report headache. All of these signs suggest impaired vision.

Pupils exemplifying any of the above signs should be referred to a competent specialist for examination and recommended care or treatment. The use of the Snellen chart or other screening test represents standard procedure in most schools, but final disposition of doubtful cases rests in the hands of the ophthalmologist.

The blind child may be classified as one totally without vision, one who cannot see for all practical purposes, or one who sees at 20 feet what the normal child recognizes at 200 feet (commonly referred to as 20/200 vision). Such children require special schools or special classes. Most states maintain schools for the blind, admirably equipped to care for persons who enroll in them. The primary function of classes for the blind is to teach the braille system and to instruct children in the use of the typewriter. Only highly specialized teachers are qualified to teach in schools or classes for the blind. They should understand the methods, materials, equipment, and diversified vocational training needed for such cases.

The partially sighted child may be defined as one whose vision measures between 20/200 and 20/70 or one with serious visual defects indicating the need for special-class instruction. The National Society for the Prevention of Blindness estimates that one child in approximately five hundred would profit by instruction in sight-saving classes. Partially sighted pupils may be educated in either special classes or regular classes, although current opinion favors the special class. The special class provides opportunities for the use of methods and materials seldom found in regular classrooms. The regular class, on the other hand, has certain social advantages by enabling the partially sighted pupil to mingle with normal children and the practical advantage of eliminating extra travel to another school or community.

Education for partially sighted children differs widely from procedures used in schools for the blind. While both types of institution require teachers specially trained and adapted to the work, classes for the partially sighted present several unique problems. In the first place,

books printed in large type and maps drawn to large scale take the place of the braille system.[1] Special typewriters, equipped with "jumbo type," enable the pupil to communicate the written word. The course content approximates the subject matter used with normal children. Only methods, materials, and equipment are adapted to the needs of the group. Classrooms contain indirect-lighting fixtures which focus

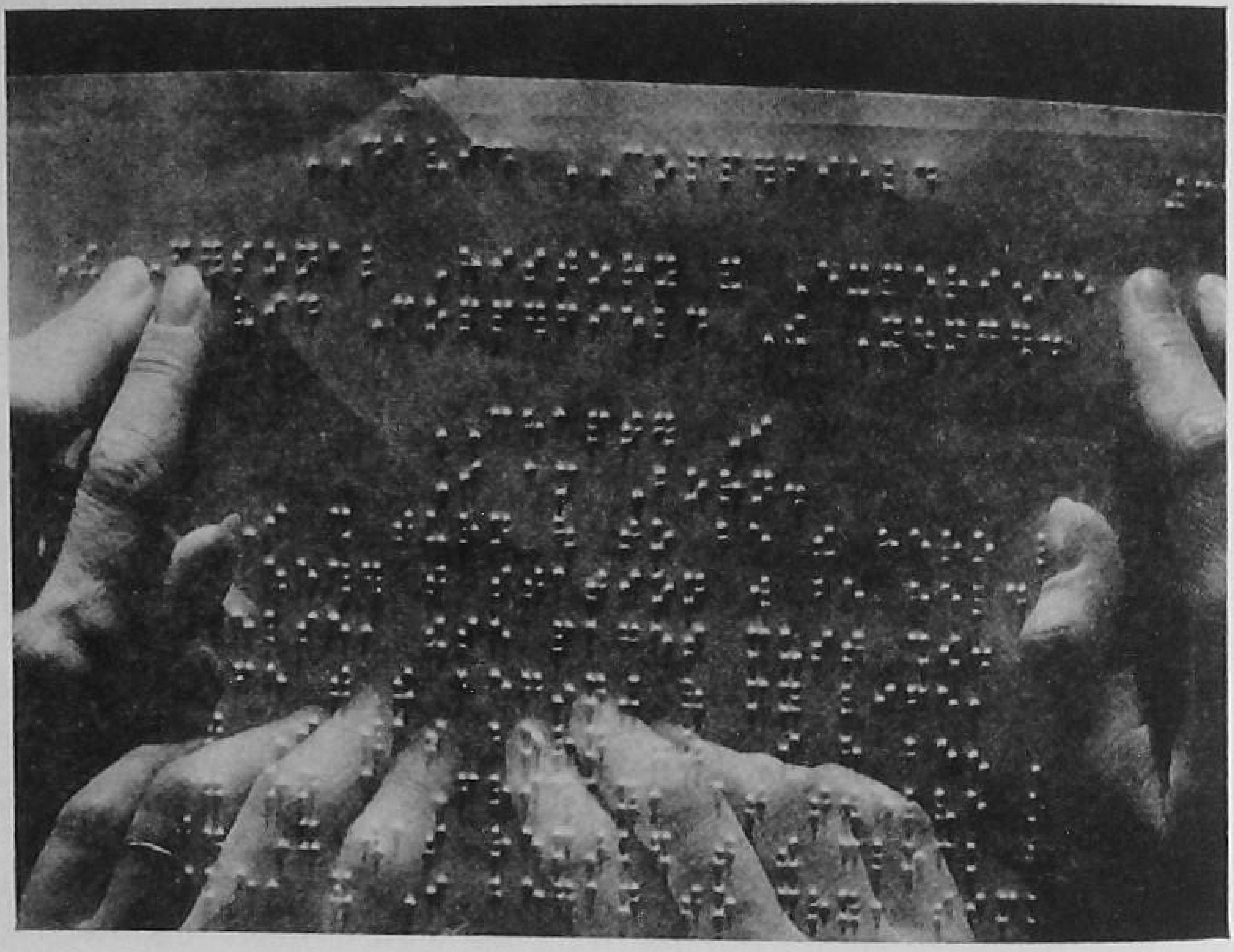

FIG. 13. Braille edition of "David Copperfield."

20 to 30 foot-candles of light on each desk without glare or shadows. Each class numbers from twelve to fifteen pupils, depending somewhat upon the variation of grades in the room.

A child with impaired vision may be defined as one whose sight measures between 20/70 and 20/20 (normal), and one whose vision serves all practical purposes by wearing properly fitted glasses. Such children do not need special classes, and their educational requirements are best served by associating with normal pupils in customary school activities. The qualified classroom teacher helps the child with impaired vision to make the necessary adjustments in using his glasses

[1] The partially sighted child usually tries to read the braille characters, thus subjecting his eyes to possible strain.

properly and in protecting his eyes from strain and accident; otherwise he receives the same attention accorded pupils with normal vision.

The Crippled and Posture Defective. Frequent vague use of the terms "crippled and posture defective" has resulted in a tradition of practice but a confusion in definition. As used here the terms refer to children showing marked deviations from normal in controlling the bones, joints, and muscles. At one end of the classification scale appears the crippled group with serious deformities, at the other end, the posture defectives with less disability in structure or function.

The crippled child may be paralyzed, deformed, or show pronounced evidence of lasting disease affecting the bones, joints, or muscles. Posture defectiveness is associated with improper muscular development, poor body mechanics, malnutrition, muscular tension, mechanical unbalance, or weak feet—conditions that respond to education if the underlying cause is removed.

The earliest attention given to the education of the handicapped dealt with the crippled, the movement having begun under the auspices of voluntary organizations. Gradually the states adopted legislation authorizing care and education of the crippled at public expense. The first legislative enactments tended to establish state institutions, although more recent trends favor special classes or schools in local districts. As far back as 1897 Minnesota authorized medical and surgical attention for the indigent crippled children of the state, and in 1904 a law established the Massachusetts School and Home for Crippled and Deformed Children. Chicago organized the first school classes for cripples in this country in 1899; New York City followed in 1906.

Education of the posture defectives paralleled that of the crippled, although under a different department of the school. A prominent era of physical education dealt with corrective gymnastics, which had for their primary purpose the improvement of posture by the application of precise muscular exercises. Under this and similar names (medical gymnastics, corrective exercises) corrective gymnastics left their mark on the schools and formed the compelling force behind the newer term, corrective physical education.

Whether corrective physical education belongs within the department of the handicapped or should remain as a specialized area of physical education poses a neat administrative problem, somewhat similar to reaching a decision about establishing the education of the handicapped as a separate department or associating it with health education. Irrespective of its administrative allocation, corrective physical education

has a place in the schools so long as its efforts are directed toward the educational aspects of improving posture. Perhaps a better title for this program would be "physical reeducation." When corrective physical education enters the field of treatment, administrative authorities need to reconcile this development with the stated purposes of the public schools.[2]

Determination of crippled and posture-defective cases in need of special education rests primarily with the orthopedic physician. Teachers may assist in referring cases to him for examination, but the problem of deciding whether the child should remain in the regular class or transfer to a special school is largely medical rather than educational. The physician's responsibility extends further to determining the amount of time the child shall spend in school, to recommending the type of special equipment required, and to assisting the school authorities in the selection of a program designed to meet the needs of the individual. The competent orthopedic physician knows that not all crippled or posture-defective children need special education. Crippled or misshapen pupils who make normal use of their bodies should receive their education in regular classes and regard themselves as normal individuals.

Types of special education for the crippled and posture defective include special schools organized by the community, special classes in regular schools, state-maintained residential schools, and instruction at home for the homebound. Many crippled children are mentally retarded, a factor requiring consideration in planning the program of study. Their education follows as nearly as possible the program offered normal children, with slightly greater emphasis on household arts and budgeting, social and civic responsibilities, health, physical development, and skills pointing toward industry. Highly skilled teachers and low class enrollments (not more than ten to twelve pupils) complete the picture of education for the orthopedically handicapped.

Influential groups outside the school stimulate public interest in this type of education. Noteworthy examples are the Rotary and Kiwanis Clubs. These clubs and other organizations provide funds and support for special education in schools and for the care and treatment of these unfortunates by various agencies.

Speech Defectives. Approximately one child in forty shows a speech defect in need of attention. The more serious types are stuttering,

[2] Discussion of the function of the schools with reference to instruction, services and treatment appears on pp. 135-136.

stammering, and various phonetic difficulties. To these may be added a high-pitched voice, unpleasant guttural sounds, a harsh voice, and the monotone. Stuttering means the repetition of the beginnings of words, especially those which start with a consonant. Stammering relates to the repetition of syllables or even of the entire word. Phonetic difficulties include lisping and baby talk.

Speech defects usually appear before the age of six or by the time the child enters school. The alert kindergarten or first-grade teacher has the opportunity to observe these defects early enough to obtain corrective results if she understands the basic causes of the defects and knows the proper course of action.

Defects of this nature may arise out of psychic disturbances or physical disorders. The child's home life may be governed by strict discipline and constant nagging by parents or older brothers and sisters. Abnormal prolongation of the frenum, on the undersurface of the tongue, often causes difficulty in forming the correct sounds of speech. The deaf mute or the mentally retarded child frequently has trouble in learning to talk.

The correction of speech defects involves removal of the underlying cause and training the child to produce the correct sounds. Removal of cause first suggests sending the pupil to his family physician for an examination to investigate the need for medical or surgical care. The doctor may recommend a hearing aid (in case of partial deafness) or referral of the case to a psychiatrist to resolve the personality conflict.

After the cause is removed, the task of teaching the child to speak correctly belongs to the school. A qualified speech correctionist works wonders with small groups of children, meeting with them two or three times per week for brief periods. Pupils remain in regular classes except for periodic visits to the speech center and engage in all normal activities. No special classes, as such, are necessary. The classroom teacher may handle mild cases of speech defects.

Many state universities and teachers colleges maintain speech clinics for diagnosis and recommended follow-up. Oftentimes these clinics are of the mobile type, traveling to local districts with a staff of trained experts in speech-defect diagnosis and correction.

The economic and social values of correct speech indicate the imperative need for early diagnosis, and the application of remediable measures now becomes firmly established as an educational technique of proved quality.

The Malnourished. Nutrition classes and special food for the malnourished found their way into the schools a long time ago. Even

before the great wave of interest in undernourished pupils, which began during the second decade of the present century, individual schools provided hot lunches and mid-session milk for those seemingly in need of additional food. Sometimes regarded as a particular feature in the education of the handicapped, but more often accepted as an integral part of health education, these mid-session lunches or nutrition classes spread rapidly throughout the nation.

Reasons for the widespread interest in the malnourished stem from two related sources. On the one hand, food constitutes one of the basic needs of man and great emotional forces quickly organize to assist the poor and unfortunate school child who apparently does not have enough to eat. Educators found that use of the familiar phrase, "you can't educate a child with an empty stomach," led to public sympathy and support for the establishment of extra-feeding programs. The other factor concerns the appearance, at a most propitious moment, of the height-weight-age tables, which gave statistical evidence of the weight a child should have in relation to his age and height. Variations of "average" were established at from 7 to 10 per cent above or below the measure of central tendency appearing on the tables; beyond these limits the child was either underweight or overweight, although most of the attention focused on the so-called "malnourished." These height-weight-age tables came into existence during the educational era that glorified the standardized test as an accurate measure of achievement in most academic subjects. Despite the warnings of qualified physicians and experts in health education that the height-weight-age tables represent but *one* means of screening the malnourished, many unsuspecting educators continue to use this scale as a dependable single indicator for selecting those in need of additional food.

A social enterprise having great emotional appeal coupled with an apparent technique for measuring quantitative elements in terms of precise amount can go far in any community. Nutrition classes or provision of special food for the malnourished became such an enterprise. The school without a program for mid-morning lunches was looked upon as a backward school. In a number of communities, even those with schools of recognized merit, the criterion of success in health education was often the tons of weight gained by the aggregate student-body during the year! Vestiges of these unscientific feeding programs for the supposedly malnourished and dependence upon height-weight-age tables without consideration of other basic factors remain in some schools of the present era.

Somewhere around 1925, experts began to question seriously the

validity of universal feeding of the underweight and to oppose the indiscriminate use of height-weight-age tables as a true measure of nutritional status.[3] Throughout the intervening years several factors have come to light which merit attention. Authorities agree that weight alone does not provide a safe measure of nutrition; *i.e.*, being underweight is not necessarily a symptom of malnutrition nor are all malnourished children underweight. Nutrition may constitute one factor in determining those who are underweight, but so does individual body build, the general family pattern of structure, and the child's clinical history of growth and development. Trained social workers observe that the actually malnourished child in school probably comes from a home with insufficient food, and that the wiser course enlists community support to improve the nutritional status of the entire family. Pediatricians fail to give universal support to the principles behind mid-session feeding, claiming that this food may reduce the appetite for the enjoyment of regular meals and that most nutrition classes at school accomplish few lasting benefits without appropriate attention to improving the home. Evidences of malnutrition often accompany other unhealthful conditions (habits, disease, or abnormality) which require correction as a supplement to the food given.

In view of these factors, what position should the school take with respect to malnourished children? Some schools will continue with the established plan of weighing the children monthly, taking the height twice a year, comparing these data with standardized height-weight-age tables, selecting those children 10 per cent or more underweight, and giving them a glass of milk and a chocolate wafer once or twice a day.[4] Other schools will take into account the confusion described in the preceding paragraph and discontinue the program—unless public opinion compels them to carry on. Still other schools will organize nu-

[3] Dr. Thomas D. Wood, although coauthor of height-weight-age tables in common use, was one of the first to explain the fallacies of existing procedures.

The American Child Health Association led in this movement. See especially Raymond Franzen, "Physical Measures of Growth and Nutrition," *School Health Research Monograph* 2. American Child Health Association, 1929. (Distributed by the National Education Association, Washington.)

Later Derryberry reviewed another aspect of the problem. See Matthew Derryberry, "Reliability of Medical Judgments on Malnutrition," *Public Health Reports*, *Reprint* 1909. Washington: United States Public Health Service, 1938.

[4] The weighing and measuring of children serves the useful purpose of furnishing information associated with the program of health services and provides a worth-while motivation in health instruction, especially with respect to physical growth and development.

trition classes in accordance with principles approved by health education and education for the handicapped, as described below.

In general sound procedures for the organization and conduct of nutrition classes relate to the determination of malnourished cases and to the school's function in providing educational opportunities for them.

Malnourishment is a defect, like bad teeth or diseased tonsils; hence the school will regard the detection of this defect as a function properly belonging to the health-services program. Teachers will observe pupils for the usual signs of early fatigue, flabby musculature, poor posture, underweight, lack of ambition, anemia, lowered resistance to disease, and other indications listed by competent medical authority. These cases will be referred to the school physician, board-of-health physician, or family doctor—depending upon the approved policy of the school system in such matters.

The community must adopt a policy concerning the advisability of maintaining special feeding classes under the direction of the school or another agency of government or of attacking the larger problem of raising the nutritional status of the entire family. If the decision points toward the family problem, the school will assist in arousing public opinion toward a satisfactory means of handling the issue under another community agency. Should the community decide that the school should conduct nutrition classes, the selection of cases will follow the recommendation of the family physician (or a competent pediatrician if the family has no physician), the preparation and serving of food will conform to standards prescribed by a nutritionist, the student will pay for the actual food consumed (not service or equipment charges) with professed indigence investigated by the local welfare department, and a competent physician (preferably the family physician) will reexamine each pupil in the nutrition class at least every six months to evaluate the progress made. During the pupil's assignment to the nutrition class he will remain with his regular grade and engage in all normal activities consistent with the degree of malnourishment and associated factors.

In summary, a program for this type of handicap includes the following: (1) an adequate amount of nourishing food at proper times, (2) removal of associated physical defects or bad habits, (3) prevention of undue fatigue, (4) adequate rest, (5) development of physical capacities, (6) frequent reexamination by a competent physician, and (7) complete cooperation of the home.

Cardiac Defectives. The increasing rate of heart disease as a leading cause of death among adults helps to focus public attention on this condition in schools. Overzealous parents and teachers sometimes turn suspicious eyes on the child who leaves the playground flushed with the rewards of victory after a close contest. In opposition to the fears of such parents and teachers, many creditable physicians hold to the belief that a normal child will not injure his heart by exercise.

In fact the heart of the normal child serves as a good barometer in activity. When fatigue overtakes him, he rests the tired muscles of his arms and legs and his heart. In the final analysis, the heart is a muscle that requires activity for growth and development for the same reason that children's other muscles become strong through strenuous exercise in games and sports. Only the plaudits of aroused spectators may stimulate a player to overtax his heart and other organs. Most authorities now reject even the possibility of an "athletic heart," a generation ago believed to result from overexertion. Rather, these experts explain, the so-called "athletic heart" arises from congenital or acquired unhealthful conditions, which should have been observed earlier in life. With the heart as a barometer for the normal child and with examining physicians and qualified teachers of physical education to supervise vigorous activity, teachers and parents may rest assured that the situation is well in hand.

Occasionally a child does exhibit actual cardiac deficiency. Some authorities estimate that approximately one school child in 150 suffers an abnormal heart condition worthy of special attention. Physicians vary considerably in noting these conditions during regular examinations, which suggests following the course recommended by the family doctor or having a cardiologist review the findings of the general school examiner.

The elusive nature of abnormal signs precludes a safe statement of conditions for observation by the teacher, although school physicians in local districts may provide such a list. The physician classifies organic heart disease as either congenital or acquired. Congenital disorders usually grow out of structural defects in the circulatory system prior to birth. Acquired heart abnormalities nearly always relate to a previous acute infectious or chronic disease; among the most common are rheumatic fever, scarlet fever, diphtheria, influenza, measles, and tuberculosis. More and more, doctors tend to associate heart disease with rheumatic fever, which in itself often is secondary to infected tonsils or abscessed teeth.

The education of cardiac sufferers presents a series of problems.

Not all of these cases require special attention. Mild cases need sensible instruction in the appreciation of their limitations, and pampering and arousing fears do more harm than good. Even more serious cases may remain in regular classes with a modified school program, location of classrooms and lavatories on the ground floor to avoid stair climbing, and with transportation to and from school. Upon the advice of competent medical authority, special classes or schools may help to solve the problem. Visiting teachers give instruction to those who must remain at home.

The Tubercular. Great changes have occurred in the education and care of persons suffering from tuberculosis. The open-air classes in New England with their frigid temperatures in winter have joined the slates and common drinking cups as things of the past. The tendency to shun a person suspected of having tuberculosis as though he were afflicted with a plague has given way to scientific diagnosis and probable cure. These things have happened through the superior efforts of state and local public-health organizations, assisted by the National Tuberculosis Association and its subsidiary branches.

Discovery of the specific cause of tuberculosis, the tubercle bacillus, led to rapid advancement in diagnosis and treatment. No longer need the teacher suspect his pale and underweight pupils of having developed the serious malady. He has learned that unless the tubercle bacilli actually enter the body, the person cannot contract the disease. He has learned, too, that tuberculin tests administered by an expert readily detect the sensitivity caused by the bacilli in the tissues.

The Mantoux test is most often used. This test consists of injecting between the layers of the skin a small quantity of tuberculin. If the person has infection, a slightly elevated and red spot appears in a few days; this is known as a positive reaction. All positive reactions should be followed by the X-ray examination. Pirquet's test and the patch test are somewhat less accurate than the Mantoux test.[5]

Tuberculosis seems to affect a specific age group. Between the ages of five and fifteen, the tubercle bacilli apparently become walled off within the body tissues and neither damage the individual nor infect another person. After the age of fifteen tuberculosis becomes a serious health hazard deserving the attention of both education and public health.

[5] "The Physically Below-par Child," p. 5. New York: National Tuberculosis Association, 1940.

Whether active cases of tuberculosis should receive their education in regular classrooms, attend special classes, or go to a sanitarium remains for the board of health to decide. The decision reached depends upon the care needed by the patient and the possibility of others becoming infected. In any event the patient should have educational advantages, even in the sanitarium, because he probably will return to an active life, fully recovered—assuming early diagnosis and treatment.

Around the turn of the present century special classes for pupils with tuberculosis were of the open-air type characterized by an abundance of air regardless of low temperature, frequent rest periods, and supplementary quantities of nutritious foods. More recent standards for these schools suggest the temperature recommended for normal pupils (65 to 70°F.), opportunities for play in the open air the same as for all children, and teachers especially trained for this type of work.

The Epileptics. The limited number of epileptic cases in a given school system usually creates no particular educational problem. Under ordinary conditions these pupils learn as readily as normal children, adjust to the customs of the classroom, and present no difficulty except at the time of seizure. Some persons experience slight seizures with only temporary loss of consciousness, others lose consciousness for an extended period of time and have violent convulsions. The effect of a seizure on other pupils deserves consideration as well as the condition of the epileptic himself.

School authorities, in consultation with parents and the family or examining physician, will decide whether the epileptic should enroll in the regular class, remain at home, or be sent to an institution. If he enrolls in a regular class, few exceptions need be made for him except those recommended by the family physician. If he remains at home, the visiting teacher will give the instruction approved for the homebound. The state education department has the responsibility for supervising the education of institutional cases.

Low Intelligence. Special classes for the mentally deficient or graduated sections for retarded pupils in regular classes have represented standard practice in most school systems for more than a generation. States provide institutional care for extreme cases, especially for persons both mentally and physically handicapped.

Assignment of a given child to a special class or retarded section should follow an examination by a person competent and experienced in the use of individual intelligence tests, conferences with the guid-

ance counselor, and a thorough health examination to determine physical impairments possibly contributing to his inability to profit by the activities of the regular classroom.

Some authorities recommend special classes for children with an intelligence quotient approximately between 50 and 70. Those with an intelligence quotient between 70 and 90 may be enrolled in regular classes or graduated sections of a regular class. Probably a special institution renders the best training and education for a child with an intelligence quotient below 50.

Only highly specialized teachers are qualified to instruct the mentally handicapped. These teachers soon recognize the needs and abilities of their individual pupils and arrange educational experiences within the limits of capacity represented. The program follows the general pattern of the regular school, with adaptation to fit individual and group needs. Pupils assigned to retarded sections should receive instruction and guidance designed to return them to regular classes as quickly as possible.

The basic principle behind special and retarded classes involves consideration for the best educational interests of the pupil himself and of other pupils in the regular class to which he otherwise would be assigned.

Emotionally Atypical. Although school authorities seldom provide special classes for emotionally atypical pupils, these children require the sympathetic and understanding guidance of superior teachers who recognize abnormal manifestations, and who direct the educational experiences of these children toward worthy ends. A discussion of this topic, therefore, properly belongs in a chapter on education of the handicapped.

Mild manifestations of atypical emotional behavior are found in the nervous child who needs only a varied program of school activities, a well-adjusted and qualified teacher, and sound assistance from the guidance counselor. Oftentimes these children possess superior mental abilities and profit by a broad range of experiences beyond those contained in textbooks and scheduled classes. Consideration of work done out of school, home and family relationships, and health status as determined by a physician help in planning the educational program for such pupils.

Evidences of extreme emotional disturbance characterize the neurotic child, who may exhibit numerous types of peculiar mannerisms. Easily kindled emotions of fear, anger, and many others burn with

intensity and finally subside, leaving in their wake an upset child and probably a disturbed class. Most neurotics inherit at least the tendencies for abnormal behavior from parents or grandparents, although the competition and struggle for success in modern society take their toll in frayed nerves and bristling tempers.[6] Such children need the assistance of psychiatrists, psychologists, and guidance counselors.

The classroom teacher holds the key position in detecting signs of emotional abnormality among pupils and a responsible position in protecting such pupils against factors that prevent normal growth and development. First of all the effective teacher demonstrates by his own personality the kind of emotional responses he expects from his pupils. The highly emotional and erratic teacher never succeeds in implanting sound principles of good mental hygiene, poise, and relaxation in his pupils. Ryan states the case:

> In general psychiatrists and mental hygienists agree that teachers play an important part in determining children's behavior. Many of them put the school with its childhood asociations next to the home as a significant factor in the development of personality, and consider the teacher second only to the parent in influencing for good or ill the mental health of the child.[7]

A working knowledge of growth and development aids the teacher in dealing with emotionally atypical cases.

Socially Atypical. Closely associated with the emotionally atypical are pupils with social handicaps. The socially atypical child experiences difficulty in conforming to patterns of conduct approved by society. Four classifications describe the range of these cases and the care prescribed in terms of those who should have custodial care, rehabilitation, preventive care, and developmental opportunities.

The custodial group includes the feeble-minded, who cannot return to society and must remain in state or private institutions.

Those capable of rehabilitation include the delinquents and "incorrigibles," who may be enrolled in an institution for a period of time under the guidance of highly skilled technicians. These technicians attempt to correct the maladjustments and return the individual to society as a responsible citizen.

Preventive care relates to problem children, who remain in school

[6] W. B. Bromberg, "The Mind of Man," p. 1. New York: Harper & Brothers, 1937.

[7] W. C. Ryan, "Mental Health Through Education," p. 11. New York: The Commonwealth Fund, 1938.

under the close supervision of the guidance clinic and psychiatric service. Most of these pupils gradually learn the essential adjustments to home, school, and community life.

Developmental opportunities are needed by children showing slight evidences of social abnormality. The total problem involves adult education to provide better homes as well as rich experiences for the pupil in physical education, recreation, church and community affairs, and gainful work in a wholesome environment.

Responsibility of Government. Because of the complex nature of current policies and procedures relating to the education of the handicapped, a summary of responsibilities belonging to government may help in the formulation of basic principles underlying this important program. Obviously the problem of providing suitable educational opportunities for the disabled faces the school administrator who, in the final analysis, must recommend the passage of necessary state legislation and the adoption of local policies.

The board of education and the people look to the administrator for advice, as he slowly and deliberately weighs the evidence on this three-sided issue: (1) the responsibility of boards of education to provide equitable and sound educational opportunities for all children of school age in the community and to conduct these activities in the most economical manner consistent with efficiency, *i.e.*, to provide the greatest good for the greatest number; (2) the educational advantages and disadvantages to the handicapped pupils themselves in special classes or special schools; and (3) the probable effect on the education of normal pupils in regular classes of segregating or not segregating certain handicapped groups.

As the administrator ponders over these issues, he draws upon basic principles of education acquired through professional preparation and experience and seeks the advice of qualified persons outside the community as well as the counsel of lay and professional groups within the district. The wise administrator consults the state education department, approved graduate schools of education, and one or more of the national associations concerned with the defect in question, because the advice obtained locally oftentimes is loaded with bias. The emotional appeal of a defective child arouses public sympathy toward spending large sums of money for his education in a special class, or family pride may look upon segregation as further evidence that the schools propose to emphasize unduly the abnormal manifestations of an unfortunate youth. Sometimes classroom teachers unwisely recom-

mend special classes or schools for partially handicapped students who require only limited modification in the regular program, because such pupils impede the progress designated as standard for the normal class. Occasionally the examining physician approves educational segregation for handicapped pupils because of his background of training and experience in pathology, but without due regard to the health environment of special classes in comparison to regular classrooms.

Basic Factors for Consideration. School officials need to consider several basic factors in planning educational programs for the handicapped. The rather didactic statements that follow aim at brevity and the crystallization of at least one school of thought.

Doubtless the most advanced cases require special schools or classes conducted by the state or local district. Keep special classes to a minimum, with adaptations in regular classes whenever possible and expedient; many psychologists and mental hygienists believe that appropriate grouping within a regular class surpasses segregation which cannot provide appropriate opportunities for growth and development.[8] Recognize the possibility of further impairment in physical or mental health if the problem is neglected.

Education in special classes should follow, as nearly as possible, the activities scheduled for regular classes. Help the child to live a normal life, compatible with his limitations. Protect him from attitudes of inferiority, incompetency, frustration, and failure. Arrange for him to attend social functions organized for normal pupils. Recognize the fact that special classes increase the costs of education by the employment of highly skilled teachers, low teacher-pupil ratios, and provisions for special equipment and facilities. Be sure that all school officials and the community at large fully understand the educational policies underlying the organization and conduct of special classes. Return pupils to regular classes as soon as possible.

Before proceeding with plans for the organization of special classes, qualified school officials will obtain satisfactory answers to certain fundamental questions. Has the board of education the legal right to spend

[8] For discussion of a different point of view, *i.e.*, that handicapped children benefit by living in segregated groups until they have established competency and security and thus have prepared themselves to meet the exigencies of modern society, see R. G. Barker, B. A. Wright, and M. R. Gonick, "Adjustment to Physical Handicap and Illness; A Survey of the Social Psychology of Physique and Disability," *Social Science Research Council Bull.* 55. New York: Social Science Research Council, 1946.

public funds for the proposed education or services? Will the proposed education or services facilitate the fulfillment of the avowed purposes of the schools? Will the improvement in educational opportunities outweigh the prejudices encountered? Can the community meet the increased costs without unduly restricting the educational program for normal children? Does the community or state now offer facilities that might be utilized to advantage? Could the schools more effectively perform their recognized function by encouraging another community or state agency to assume the responsibility for educating and caring for these children?

Should the school officials decide to offer a special program for the education of the handicapped, three responsibilities command attention: (1) identification of pupils needing special education, (2) selection of teachers qualified to instruct children with specific defects, and (3) supervision of the project.

1. *Identification.* The amount or degree of disability serves as a safe criterion in determining the need for special education. The nature of the disability provides a guide for the type of education offered.

Pupils may be screened for special classes by the observation of classroom teachers, reports by parents, or upon recommendation by family physicians. The actual nature and extent of the disability, however, becomes the problem of the school medical adviser and psychologist or guidance counselor. The school medical adviser must possess competence in determining the degree of defect under consideration and knowledge of the approved standards of special classes for the specific disability. Often he will need to consult a medical specialist in the particular type of defect, and usually he should seek the advice of an authority on education for the handicapped. The school psychologist or guidance counselor may need similar assistance. The serious responsibility placed on these persons cannot be denied. As technical experts, they render the judgment that a child assigned to a handicapped class needs special instruction of this nature and, as agents of the board of education, decide that the experience justifies the additional cost.

In the final analysis, the administrator must determine the amount and kind of attention given to handicapped pupils upon recommendation of the school medical adviser, psychologist or guidance counselor, and special teachers.

2. *Special Teachers.* As a basic requirement, teachers of the handicapped require training and experience as instructors of normal children in the grade or area for which the special class is designed. In addition, these persons must have special preparation as teachers of

pupils with the specific disability. State certification standards should specify the types of special classes for which the teacher qualifies.

Special classes demand teachers equipped to guide efficiently the welfare of handicapped children. Countless observations indicate the dubious results obtained where regular classroom teachers, without special preparation, assume instructional responsibilities with handicapped groups. The actual case of a special class for cardiac deficiency serves as an example. Here, children transported to the school by taxicab at public expense were assigned to a classroom located on the third floor. With a basement cafeteria and lavatory, the children walked up and down stairs several times each day. The untrained teacher neglected to report the conditions, and the physician who recommended assignment of children to the class never had visited the school!

3. *Supervision.* Special classes require careful supervision. On the basis of physical disability, students in these classes need reexamination at least twice during each school year, with more frequent examination of certain cases, or upon request by the teacher continuously observant of signs indicating further deviation or improvement.

Supervision for social adjustment presents an important problem. Some pupils assigned to special classes experience a feeling of inferiority or incompetence. Within practical limits the organization and conduct of such classes should approximate the experiences of normal children.

Adequate supervision by state and local authority gives greater assurance that the program offered in special classes follows prescribed standards. Competent supervisors recommend that pupils in these classes join with normal children in as many school events as possible.

The following organizations provide helpful information for the education of the handicapped: American Heart Association; American Medical Association; American Society for the Hard of Hearing; National Foundation for Infantile Paralysis, Inc.; National Society for Crippled Children and Adults; National Society for the Prevention of Blindness; National Tuberculosis Association; and the United States Office of Education.

Summary

Education of the handicapped refers primarily to pupils who, because of advanced degrees of abnormality, require special classes or schools for appropriate instruction. Although some school authorities prefer to organize this program as a separate department of instruction, the present trend to combine education of the handicapped with health

education appears justifiable from the standpoint of both function performed and personnel involved.

Numerous classifications have been proposed for the handicapped. The one used in this chapter relates to functional disability: (1) deaf and hard of hearing, (2) blind and partially sighted, (3) crippled and posture defective, (4) speech defectives, (5) the malnourished, (6) cardiac defectives, (7) the tubercular, (8) the epileptics, (9) low intelligence, (10) emotionally atypical, and (11) socially atypical.

If competent authority diagnoses the condition as deafness or hard of hearing and in need of special education, the child may be (1) sent to a special school or class for the deaf, (2) assigned to a special class for the hard of hearing, or (3) kept in the regular class with the necessary adjustments made in his program. A wide range of physical-education activities, especially athletics, dancing, tumbling, and aquatics, contributes to the bodily development and social adjustment of such pupils.

The blind child is one totally without vision, one who cannot see for all practical purposes, or one who sees at 20 feet what the normal child recognizes at 200 feet. Such pupils require special schools or classes. The partially sighted child's vision measures between 20/200 and 20/70, or he may have serious visual defects indicating the need for special instruction. So-called impaired vision measures between 20/70 and 20/20 (normal).

The crippled child may be paralyzed, deformed, or show pronounced evidence of lasting disease affecting the bones, joints, or muscles. Posture defectiveness is associated with improper muscular development, poor body mechanics, malnutrition, muscular tension, mechanical unbalance, or weak feet. The question of whether corrective physical education belongs to the department of the handicapped or to the department of physical education, poses about the same problem as the education of the handicapped remaining as a separate department or combining it with health education.

The various types of speech defectiveness are (1) stuttering, (2) stammering, and (3) phonetic difficulties. A qualified speech correctionist works wonders with small groups of children, meeting with them two or three times per week for brief periods.

The community must adopt a policy concerning the advisability of maintaining nutrition classes for the malnourished under the direction of the school or another agency of government, or of attacking the larger problem of raising the nutritional status of the entire family. Determination of malnutrition requires the services of a competent

physician. Many current programs of this sort rely more on traditional sympathy than on scientifically determined need.

The proper education of cardiac cases presents a complex problem. Not all of these cases require special classes. Mild cases need sensible instruction in the appreciation of their limitations, and pampering and arousing fears do more harm than good. Even more serious cases may remain in regular classrooms with a modified school program and with the convenient location of various facilities. Special classes may be needed upon recommendation by cardiologists and experts in the education of the handicapped. Visiting teachers attend the homebound.

Contrary to former practice, which favored open-air classes and long rest periods, tubercular cases may require separate classrooms, but with (1) the same temperature recommended for normal pupils; (2) opportunities for play in the open air, the same as for all children; and (3) teachers especially trained for their work.

School authorities, in consultation with parents and the family or examining physician, will decide whether the epileptic should enroll in the regular class, remain at home, or be sent to an institution.

Classroom teachers hold the key position in dealing with the emotionally atypical child. He may need the expert assistance of the psychiatrist or guidance counselor, although most of these cases respond to instruction given in regular classes by qualified teachers.

Socially atypical children may need (1) custodial care, (2) rehabilitation, (3) preventive care, or (4) developmental opportunities—depending upon the severity of the case.

Certain fundamental questions surround the organization of special classes or schools in local communities. Has the board of education the legal right to spend public funds for the proposed education or services? Will the proposed education or services facilitate the avowed purposes of the school? Will the improvement in educational opportunities outweigh the prejudices encountered? Can the community meet the increased costs without unduly restricting the educational program for normal children? Does the community or state now offer facilities that might be utilized to advantage? Could the schools more effectively perform their avowed purposes by encouraging another community or state agency to assume the responsibility for educating and caring for these children?

If the community decides that the board of education should operate certain special classes or schools, careful attention must be given to the three factors of (1) identification, (2) special teachers, and (3) supervision.

Problems of healthful school living, discussed in the chapter that follows, relate specifically to environmental conditions associated with the prevention of and suitable provisions for atypical behavior, as well as to the satisfactory control of factors in the educative processes that affect the lives of normal pupils.

Questions and Problems for Discussion

1. Give reasons for assigning to this program the title of (*a*) education of the handicapped, (*b*) department of the exceptional, or (*c*) special education. Keep in mind contemporary views on education and the type of program planned.

2. Under what conditions, if ever, should this program be combined with health education? What changes in one program or the other should normally follow such a combination?

3. Does the classification of the handicapped proposed in the text appear satisfactory to you? What other classifications have been proposed? What is the value of proper classification?

4. List the educational provisions the average public school should make in providing appropriate opportunities for (*a*) the blind, (*b*) the partially sighted, and (*c*) those with impaired vision.

5. Does corrective physical education belong to the department of the handicapped or to the department of physical education? How do you account for the fact that corrective exercises usually relate to physical education rather than to the department of the handicapped? Differentiate between exercises dealing with education and those concerned with treatment.

6. What factors are responsible for the present controversy about school feeding for the malnourished? If you were in charge of health education in a public-school system, what advice would you give the administrative authorities relative to policies (*a*) if the program already existed, or (*b*) if certain pressure groups were urging the board of education to establish such a program?

7. What is the function of education in dealing with emotionally atypical children? State a basic principle that expresses your point of view. Select a given community and explain the application of your principle to the organization and conduct of education for those who exemplify behavior of an emotionally atypical nature.

8. Reasons expressed for the slight attention usually given to the socially atypical cases in most schools relate to the difficulty in determining such cases and to the fact that many of them overcome the handicap without special attention. In your opinion, to what degree is the above statement true or false? What opportunities and precautions in most schools might reduce the number of persons manifesting atypical social behavior as adults?

In preparing your answer to this question, keep in mind home and community influences.

9. Do the state and Federal governments have a greater responsibility for the education of the handicapped than for the education of normal or accelerated children? Do these outside agencies now provide equitable financial support and leadership? What changes do you propose?

10. Near the end of the chapter special attention was directed to the factors of (*a*) identification, (*b*) special teachers, and (*c*) supervision. Select one of the handicaps for which special schools or classes frequently are conducted and outline a suitable program covering each of these three features. Can you summarize your outline into a statement of principle that might serve as a guide to school authorities in the organization and conduct of education for the handicapped?

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CHAPTER 8

HEALTHFUL SCHOOL LIVING

Definition and Scope. Healthful school living includes the appropriate measures taken by educational authorities to ensure a wholesome environment for pupils and employees. It deals with the construction and maintenance of safe and sanitary school plants. It relates to the organization and conduct of a school program aimed to protect and promote the health of students and employed personnel. It serves as an effective laboratory for vitalizing the health and safety instruction given in special or regular classes or through incidental school experiences. In brief, healthful school living means putting into practice the fruits of scientific discovery and invention made available through the years for the improvement of school plants and processes.

The rapidly changing curriculum during the early part of the present century prompted the need for buildings and grounds of more flexible type than the square structures on small plots of a preceding generation. School architects came forward with plans for an edifice with a central base, surrounded by adjoining wings, and located on or near a public park. Destructive fires in schools aroused the public to demand fire-resistant building materials, the avoidance of open stairways which might become virtual chimneys in case of disaster, and the inauguration of fire drills. The consolidation movement brought with it the street vendor or sandwich man, who sold inferior food to pupils at exorbitant prices; then in place of these unwholesome influences the modern school cafeteria arose. Educational psychology demonstrated the futility of rigid class discipline as a valid means of preparing youth to live in a democracy, and the stern reproach or sound thrashing of the recalcitrant youth gave way to measures designed to inculcate self-discipline and to preserve self-respect. The growing importance of mental and social hygiene led to the preparation and selection of principals and teachers qualified to organize the school program in such a way as to facilitate the development of emotional control, friendliness, and cooperation among pupils. These factors and others characterize the scope of healthful school living and indicate its relationship to the total program of health education.

Contributions of Healthful School Living to Health Education. Nearly all elements of the health-education program find objective illustration in the daily operation of the school. This truism suggests that instruction in health should attain higher standards of excellence than most other subjects or programs. The few laboratory experiences in health not provided by the school appear constantly in the normal course of living in the home or community. The qualified principal and teacher exercise effective control over health factors associated with school experiences and markedly influence those occurring in the home and community.

The connection between healthful school living and health and safety instruction readily becomes apparent to the casual observer. Young children are taught the health values of washing the hands before eating or after going to the toilet; this means that the school must provide wholesome and sanitary lavatories with hot and cold running water, soap, and towels. Pupils receive instruction in the nutritive values of foods, which emphasizes the need for a school cafeteria where pupils may develop skill in selecting the proper nutrients. Instruction about exercise and fatigue and the significance of rest becomes largely academic without opportunities to acquire skills and habits in the controlled and practical laboratory experiences of physical education. Didactic instruction and class discussion concerning the prevention of accidents and the development of proper emotional attitudes lose their effectiveness in a school building with all sorts of safety hazards and a school program that generates fears and frustrations. Countless illustrations will occur to the reader exemplifying the close association between healthful school living and health instruction.

Healthful school living has many interrelationships with the health services. A child in school with observed signs of ill health is referred to the medical adviser or family physician for further examination. The need for rest rooms constitutes a problem in health services, but actually providing such rooms belongs within the province of healthful school living. The nurse who normally occupies a position of responsibility on the health-services staff may have the additional duty of supervising the sanitary aspects of the building. In fact, the mutual interrelationships of healthful school living, health services, and health and safety instruction have been largely responsible for combining these programs under the larger administrative term "health education."

Housing and Health. Accumulated evidence shows the effects of housing on health. Increased morbidity and mortality rates among fam-

ilies living in poor homes, as compared to similar rates for families in better neighborhoods, have challenged the attention of public-health and welfare workers these many years. Sickness and death are measurable factors, but the degree to which bad housing conditions affect normal growth and development remains largely unknown. Most authorities agree, however, that housing affects biological growth and development, social competence, and the incidence of delinquency.

Healthful school living relates to this subject both directly and indirectly. The average child spends several hours each day within the school environment. During this period he should have the most sanitary and wholesome surroundings which the community is able to provide. Such an environment may help to offset some of the unfavorable living conditions of the inferior home. Another direct relationship deals with teaching the child, through his actual experiences in school, the approved standards of healthful living. Parents in adult-education classes may acquire similar experiences.

The indirect responsibility of education in this problem relates to the basic principle that the school should not attempt to usurp the prerogatives of the home, but sound education helps to make the home a better place in which to live. This means that educational authorities may well assume leadership in arousing public opinion toward the improvement of housing conditions where such improvement appears necessary. Educators who fail to recognize the connection between housing and health, or housing and delinquency, take an unrealistic attitude toward the true function of the schools. When the school itself exemplifies the accepted standards of healthful living, the next step is to assist in the improvement of inferior homes within the district.

Coordinate Responsibilities. The proper construction and maintenance of school buildings entail many coordinate responsibilities among experts within the local district and state. Many state education departments provide building codes as guides to local communities. These codes represent the combined efforts of several departments of government concerned with the problem, including education and health. Oftentimes the state education department employs an experienced school architect to advise local districts with respect to building plans and to approve the plans of local communities prior to final adoption. State building codes contain standards for the size of plot, type of building and building materials, adequacy of water supply,

size and construction of classrooms and other educational units, fire protection, safety precautions, and other elements.

While the major responsibility in local districts rests with the board of education, the board of health and possibly the department of buildings and grounds have a voice in planning new school buildings and in the major repair of older structures. Where public recreation is conducted by a separate department of government, such as a recreation commission, this organization has a vested interest in the plans since school buildings and grounds represent facilities of special significance in any well-organized program of community recreation.

Within the school system itself, many persons contribute to the success of school-building construction and maintenance. As the chief executive officer for the board of education, the superintendent constitutes the highest authority among the employed personnel, although many other persons qualify as experts in specialized areas. The school architect acts on suggestions made to him by administrative officers and teachers; he is the expert on building materials and details of engineering construction. School principals and teachers know the types of classrooms, libraries, auditoriums, gymnasiums, and playgrounds best suited to the proposed educational program. The supervisor of health education or the health coordinator understands the sanitary and safety factors meriting consideration. The well-trained custodian makes suggestions about construction which facilitate the care of the building throughout the years of its service and which markedly reduce the cost of operation. The efficient administrator utilizes the expert services of all school personnel in planning and maintaining the building to approximate the accepted standards of healthful school living.

Providing a Healthful School Environment. This major issue includes the subordinate problems of building location, construction, and maintenance. The purpose of this book relates primarily to the educational features of these items rather than to a detailed account of the various standards and techniques commonly known to architects and school administrators. Even more precisely, the approach in this volume is limited to factors affecting the development of principles needed to conduct schools in a manner designed to safeguard and promote the health of pupils and employees.

Building Location. The proper location of school buildings presents a serious problem confronting education. It involves long-range planning to meet the educational needs of the community in terms of a

changing and expanding curriculum, opportunities for the extension of desirable adult-education activities, and probable trends in population shifts. In addition to matters of adequate size and drainage, the subject entails freedom from health and safety hazards and provision for leisure education in the entire community.

Economic, political, and social factors usually affect the selection of an appropriate school site. Property values in the vicinity of a proposed location have a tendency to soar far above the previously estimated value of these lands. Political influence may lead to the purchase of a site unsuited to desirable educational pursuits because influential leaders have property to sell or interests to protect. Socially prominent persons may object to the location of schools some distance away from their homes or in surroundings regarded as inappropriate. Fortunately, these supporting and opposing factors often balance each other in a democracy, with the result that informed educational authorities finally obtain the necessary approval to establish schools in reasonably wholesome and convenient locations.

To protect the health of children and to ensure opportunities for effective education, the school administrator makes use of a spot map in presenting his recommendations to the board of education. This map indicates population trends, shows building permits issued within the past five or ten years, and contains evidence obtained from public-utility concerns that employ highly reliable techniques to predict residential developments.

The efficient administrator appreciates the importance of locating buildings away from disturbing influences and health menaces. He avoids proximity to railroads, swamplands, airfields, main highways, and noisy factories. He knows the value of accessible bus lines, paved roads, and streets now existing or planned. He understands the use of shrubbery massed on the noisy side of buildings, and the wisdom of placing shops or swimming pools on this side if the school must be located near manufacturing centers.

Approved building standards establish the size of school sites essential to the success of the modern educational program. The minimum requirements are (1) elementary schools, 5 acres; (2) junior high schools, 10 acres; and (3) senior high schools, 20 acres. Approximation of these standards requires sound and long-range planning and illustrates the importance of adapting building size to the program offered by the school. A recent administrative policy worthy of note locates school buildings adjacent to public parks or playgrounds. An associated policy requires that departments of education and recreation

plan cooperatively in establishing parks, school buildings, and play areas.

Building Construction. The actual construction of new buildings and the remodeling of old ones contain health and safety elements of significance to all educators. Only through complete understanding of these problems on the part of the proper authorities, and acceptance of mutual responsibilities in solving them, may the youth of America attend schools adapted to developmental needs. Notwithstanding the vast improvements in architecture, safety, and convenience made within the past half century, the fact remains that many schools continue to show evidence of faulty construction when measured by the yardstick of approved standards of healthful school living.

The focus of attention on adaptability to purpose goes hand in hand with a building designed for beauty and attractiveness of decorations. School buildings of a factory-like appearance hinder the efforts of teachers to instill aesthetic values in children. Beauty and color in design affect favorably the mental hygiene of students. Attempts by architects to plan an attractive building sometimes lead to exorbitant costs and wasted space in corridors and stairways. The recently trained specialist, called a school architect, knows how to combine service with beauty without subjugating one of these important elements to the other.

Most building codes established by state education departments or local communities provide for safety. The fire-resistant materials that go into the construction, the wide halls and stairways leading directly to doors that swing outward and are equipped with panic bars, and the avoidance of slippery walking surfaces not only help to protect children from unnecessary accidents at school but serve as supplementary aids in teaching the habits and skills of safety.

So much has been written about heating, lighting, and ventilation that most educators and custodians are familiar with the proposed standards. A moderate and even temperature of from 65 to 70°F. best serves the needs of children in classrooms, with slightly lower temperatures in gymnasiums and a slightly higher temperature in the room containing the swimming pool. Owing to the expanding use of the buildings for school functions and community affairs, both natural and artificial lighting become a necessity. Location of buildings in open spaces and design of rooms with large window areas usually takes care of the natural-lighting problem. Long experimentation with artificial-lighting fixtures has led to the semiindirect type as the one most often recommended. With either natural or artificial light, the student needs

approximately 25 to 30 foot-candles of illumination on the work before him.[1] Some types of drawing, sewing, or shopwork may require additional light. In ventilation the factors of humidity and movement of air are essential. The open-window type of ventilation takes precedence over earlier attempts to control the chemical properties of air. Until air conditioning becomes more prevalent in school buildings, the open window and avoidance of drafts constitute the essential elements of ventilation. Teachers who give special attention to heating, lighting, and ventilation fulfill their responsibility in three important aspects of healthful school living, as well as providing good laboratory experiences in significant items of health instruction.

Every competent teacher of young children stresses the importance of personal cleanliness, regular elimination, and safe drinking water. Enduring habits and attitudes relating to these matters may be taught children as soon as they enter school. For many years educational psychologists have known that the development of sound habits and attitudes depends largely upon supervised practice under wholesome conditions. Attractive and sanitary lavatories and toilet facilities, erected in small units and located at convenient places, represent a *must* in school building construction. Further, plenty of water (both hot and cold), together with soap and towels, is required. Much of the personal uncleanliness and health disorders caused by improper elimination could be removed by appropriate attention to these matters in schools through the combined avenues of healthful school living and health instruction.

An adequate and convenient supply of safe drinking water constitutes a basic requirement in all schools. Despite the attention given to this problem during the present generation, the equipment in many schools shows faulty installation and unsanitary use. Responsibility for installing the correct type of water fixtures belongs to the board of education; instruction in the proper use of drinking fountains is the responsibility of education. The board of health has legal jurisdiction over possible contamination by impure water, although school authorities may assist with this problem by reporting evidences of impurity to the board of health and by insisting upon the examination of drinking water at periodic intervals.

Most authorities agree that the additional cost of protecting rooms against unwholesome sound reverberation represents a wise investment.

[1] A foot-candle represents the amount of illumination produced by a standard candle at a distance of 1 foot from the source.

Attention to acoustic properties at the time of building construction is less expensive than the remodeling of old buildings to reduce noise. Psychiatrists and mental hygienists point out the relationship between constant sound reverberation in classrooms and tendencies toward emotional instability among teachers and pupils. In the years ahead acoustics may assume a position of importance in building plans on a par with heating, lighting, and ventilation.

Fifty years ago the average school building was erected on a small plot of land without adequate facilities for physical education and recreation. Even the best facilities of that period included a playground in the rear of the building scarcely large enough to accommodate one game of softball and a dark gymnasium in the basement or adjacent to the storeroom attic. Fortunately, times have changed. State building codes provide for spacious outdoor play areas, gymnasiums, auditoriums, music rooms, and swimming pools. The growing significance of education for leisure makes all of these facilities as necessary as classrooms and laboratories. The trend toward wider utilization of buildings and grounds for community functions strengthens the argument for including appropriate plans for these facilities in the original drafts prepared by the school architect.

Every school, regardless of size, needs separate rest rooms for pupils and teachers. Larger schools will provide separate rest rooms for boys and girls and for men and women teachers. Instruction in the use of these rooms properly belongs to education.

In the modern school, well-equipped rooms for the health services connect with rest rooms. Opportunities for individualized health instruction and guidance in the health-services room deserve greater exploration in future years. In this room attention is focused on the child's personal health problems, under conditions that provide an excellent setting for wise counseling and expert advice. Rest rooms and health-services rooms should be regarded in their true perspective—as laboratories in the program of health education.

Building Maintenance. The custodian holds the key position in schools with reference to sanitation and safety, aided by principals, teachers, and pupils—all of these persons share in the responsibility. Clean, tidy, and well-kept school buildings and grounds not only present a wholesome environment where pupils and teachers spend several hours each day, but the influence of this example goes a long way in helping to inculcate similar habits and attitudes among pupils in matters of personal health and family living. The pride taken by children

in their school often relates to the respect they have for other public property.

The elevation of the custodian to a position of prominence in the school is a development of the present generation. Formerly, his selection depended largely upon the availability of a person who would work for a miserly salary, an individual to whom the party in power owed a political debt, or a man too old for gainful employment in other pursuits. The qualified custodian has special preparation for his work, uses approved methods to maintain school buildings in accordance with scientific standards, keeps abreast of new methods as they appear in technical literature, appreciates the need for giving efficient and cooperative service, and realizes that his position carries with it serious responsibilities affecting the health and welfare of children. Special courses in colleges and universities acquaint him with the newest methods of caring for the school building, protecting the health and safety of pupils, and utilizing his program as a factor of prime importance in health and safety instruction. In the smaller elementary schools he may be the only man available to whom the older boys go for advice; hence the need for a custodian of high moral character and a sincere and wholesome interest in the developmental problems of youth.

In a well-organized school the board of education establishes policies and procedures relating to custodial services with the same care and attention given to the selection of teachers or to planning the curriculum. The efficient custodian understands that his chief contribution to the school lies in education through service. Attractive, safe, and sanitary surroundings make worthwhile contributions to the complete education of youth. As a staff officer in the school, the custodian works under the immediate direction of the building principal; but as a staff officer, his duties relate to the entire school program—both service and instructional.

School Feeding. The history of school feeding reflects a pattern of interesting developments, beginning with free food for the hungry and indigent, moving on to the pushcart loaded with frosted apples and cookies located just off the school premises during the early days of consolidation, including the street-corner food shack or sandwich wagon, recognizing the concessionaire who brought food into the building for sale at a profit, and finally embracing the excellent cafeterias now found in many schools. Each of the previous eras left its mark on the school feeding program, which may partially account for

the rather haphazard way in which some schools now conduct these affairs.

The educational contributions inherent in school feeding, and the acceptance of the cafeteria as a health-education laboratory, largely present undeveloped areas even today despite the prodigious efforts of leaders in nutrition and health. Like most educational enterprises, school feeding as education must pass through the periods of theoretical discussion and experimentation before reaching the desired level of accepted practice. Bryan states the case clearly and succinctly: [2]

> The school cafeteria plays a four-fold role in the educational program of the school. As a source of nourishing noon meals, it helps to combat malnutrition and to maintain in the children health and vigor essential to the success of the teaching program; it is a center for the teaching of proper food selection and of good health habits, for the vocational training of some students, and for the social training of all; it presents an opportunity for correlating classroom teaching with the interests and experiences of children which center around food; and it furnishes a means of interesting the community in the food service of the school and of giving some training in the nutritional needs of children through these interests.

The typical school feeding program may exemplify some of the worthy educational principles described by Bryan—or it may fall short of them in many ways. It may be conducted by the board of education with food sold to pupils at cost—or managed by a concessionaire who expects to realize a substantial financial profit from the enterprise. The room may be attractively located on the ground floor—or placed in a dark basement. The equipment and facilities may conform to hygienic standards prevailing in the best homes and public restaurants of the community—or they may approximate those found in unsanitary hovels which remain open only through laxity by the board of health. It may be managed and directed by a skilled dietician—or operated by a person untrained in cooking or nutrition. Children may be given a choice of nutritive foods—or confronted with an abundance of sweets and starches. Pupils may have time to eat their food in comfortable surroundings—or have to rush through the meal like commuters bent on catching the last train home. The social atmosphere may be pleasant and orderly—or may typify hoodlums at a prize fight. The educational opportunities may be clearly defined and utilized—or totally ignored by both pupils and teachers.

[2] M. deG. Bryan, "The School Cafeteria," p. 15. New York: F. S. Crofts & Co., 1936.

Perhaps the historical development of school feeding and its long years of *service to* education rather than as a *part of* it account for the unstable place of the cafeteria in the minds of some educators. About 1790 the city of Munich established municipal soup kitchens for unemployed working men, and hungry school children were invited to join the laborers. France provided free canteens in 1849 to feed underprivileged pupils. England started school lunches in 1865, with legislative acts at a later date to ensure food at a nominal cost to all pupils but with emphasis on the malnourished. From these early beginnings, school feeding spread to most European countries.

In this country, the school cafeteria represents a development of the present century. Doubtless more stringent compulsory attendance laws and consolidation trends had much to do with the expanding movement. Attendance laws forced many underprivileged children into the schools where their impoverished condition aroused the sympathy of teachers and the compassion of parents in comfortable circumstances. Consolidation made distances too great for pupils to receive their noon meal at home. Most of the early school lunches were operated by concessionaires who came into the buildings for a brief period each day, a factor that probably accounts for the continuance of this administrative procedure in many school systems even today. The Board of Education in Rochester, N. Y., enjoys the honor of having established in 1903 the first feeding program under school auspices. New York City and Boston soon followed the lead of Rochester in helping to set a precedent which has extended throughout the country and which most authorities now favor as the best way to administer the school-feeding program.

School feeding challenges the interest of administrators because it is one of those marginal activities encompassing some of the functions defined as belonging respectively to healthful school living, health services, and health instruction. As a factor in the pupil's environment vitally affecting his welfare, the feeding program becomes actively associated with healthful school living. In furnishing nutritious food for underweight children, the cafeteria aligns itself with the health services (which refer to things done to the child to improve or protect his health). Health instruction is involved because the school lunch provides an excellent laboratory for inculcating the habits and skills associated with the wise choice of foods, table manners, and social conduct during meals.

Throughout the years experts have devised standards that, if put into universal use, would greatly improve the educational values of

school feeding. That educators have failed, in no small measure, to translate these proposed standards into effective action may be attributed to neglect in the professional preparation of administrators and teachers, to tradition, which designates the cafeteria manager as a nonprofessional person in the schools (like custodians and bus drivers), and to vested interests outside the schools, which reap a financial profit by preparing and serving the food. Any one of these factors is sufficient to explain the deficiencies found in many school feeding programs, although carefully conducted surveys by competent investigators usually disclose the operation of a combination of these factors.

Briefly stated, standards for approved school lunches might include the following:

1. Operation preferably by the board of education; second choice, by concessionaire with permission of and supervision by the board of education.

2. Management or direction by a highly trained nutritionist such as a teacher of home economics.

3. Provision for nutritious, wholesome, and attractive lunches ensuring a balanced diet.

4. Observance of regulations established by the board of health with respect to foods served and to food handlers.

5. Good food at low prices; not intended to yield a profit nor to pay for installation costs; may, however, carry maintenance charges.

6. No outward distinction made between pupils able to pay for food and the indigent.

7. Selection of a lunchroom that is (*a*) sanitary, hygienic, and attractive; (*b*) large enough to provide ample seating facilities for all pupils served at peak load; (*c*) free from disturbing noise; (*d*) equipped with adequate kitchen facilities—cooking utensils, refrigeration, storage space, and waste disposal, and (*e*) near washrooms for use by pupils, teachers, and cafeteria personnel.

8. Adoption of a feeding schedule that allows at least 20 minutes for eating after pupils are seated (proper arrangement of classes, together with a division of shop and laboratory periods not affected materially by an interruption for lunch, facilitates such a schedule).

9. Utilization of the school-feeding program as a significant educational experience for pupils to learn (*a*) the selection of a nutritious and well-balanced diet, (*b*) table manners, (*c*) relaxation from the tension of work, (*d*) the art of pleasant conversation during meals, and (*e*) the social graces of meeting and getting along with people by having boys and girls eat at the same table, using pupil hostesses at each

table, and planning school parties or banquets at which students preside.

10. Provision for a full meal for children in elementary and junior high schools, especially for those in elementary grades.

The comparative newness of the concept that school feeding contains unusual educational values, together with the inappropriate manner in which this program often has been conducted, accounts for the rather extended treatment given to this topic as a feature of healthful school living. Bryan states the case admirably in terms of basic principles for the school administrator: [3]

> . . . that the board of education shall be responsible for the service of food to all children who must eat their noon meal away from home; that this food service shall be operated on a self-sustaining basis and according to the principles of good business management; that the management shall be in the hands of trained dieticians whose educational qualifications are the equivalent of other teachers in the school system and whose knowledge of foods and skill in the purchase and preparation will ensure the service of nourishing, palatable food at the lowest possible prices; and that the cafeteria offers excellent opportunities for the utilization of daily experiences of the child for educational purposes.

Maintaining a Healthful School Program. A healthful school environment means more than provisions for safety and sanitation in the building and facilities. It means that the organization and management of the program shall conform to established principles of health. It means further that the human relationships between pupils, teachers, and administrators become vital factors in the educative process. Some of these items refer to responsibilities normally belonging to administration—the board of education, superintendent, and principal. Other functions belong to the teachers and pupils.

Some years ago many elements now properly associated with a healthful school program were included under the term "the hygiene of instruction." Advancement in the science of education, and substitution of the word "health" for "hygiene," resulted in a discontinuance of the nondescriptive former title.

The relationships existing between pupils and adults at school deserve constant study and attention. Certainly the nagging, irritable teacher has no place in the school or college classroom. In like manner the supervisor, principal, or dean chained to a subject-matter curriculum and consecrated to high-pressure organization is no better than a medical adviser or nurse who regards the student as an impersonal

[3] *Ibid.*, pp. vii-viii.

biological specimen. The cafeteria manager who herds students through the noon meal like a subway guard during rush hours deserves the same censure as the custodian who threatens students with disciplinary measures for making him extra work. The associations of pupils and adults at school have a marked effect upon the development of emotional and social stability.

Superintendent and Principal. The division of authority and responsibility between the superintendent and principal rests upon policies approved by the board of education. In large school systems only the bare outline of policy may come from the superintendent's office, with adaptation of procedures effected by the building principal. In smaller communities a much closer relationship often exists between the central office and the various schools. These are general administrative policies, with all sorts of variations readily observed in different school systems. Another general policy regards the building principal as the chief executive officer of the school, finally responsible for the educational experiences planned for pupils.

The degree to which teachers, pupils, and parents contribute to these planned experiences illustrates the difference between democratic and autocratic administration. The democratic superintendent or principal seeks the advice of persons affected by a decision and the adopted policy or procedure reflects the utilization of this advice. Under autocratic administration, the person finally responsible lays down the rules and expects those affected to follow his leadership.

The attitude of the principal largely determines the spirit of the school. A friendly and wholesome school executive, assuming that he possesses the necessary technical qualifications, usually provides an environment conducive to the healthful growth and development of pupils. The crusty and dictatorial executive with steadfast rules often has on his hands a group of teachers fearful of making mistakes and many children who dislike the school or regard "formal" education with suspicion and distrust. Friendly cooperation and active participation by teachers and pupils best serves the purpose of wholesome growth and development for all concerned.

Of course every school has standards and policies, but in the better schools these edicts take into account the interests and capabilities of pupils and allow for modifications in view of changing needs. In the properly organized school pupils appreciate the values of a wholesome environment and share in making the school a better place in which to live. They recognize the need for good hard work along with periods

of relaxation and, together with principals and teachers, attempt to organize a school day devoid of hurry and irritating experiences.

The program itself reflects the individual personalities of pupils and teachers. Its flexible nature ensures the interspersion of wholesome play between periods of serious academic work. Such factors as tests, grades, promotions, and homework become secondary to the all-round development of children.

The length of the school day varies with the age of students. Young children may remain at school for a few hours only. The high-school day of the future obviously will increase in length with broader experiences provided for students, these experiences to include greater emphasis on the social and leisure values of sound education.

The problem of homework requires careful study. On the one hand, many parents, principals, and teachers believe that several hours of home study are necessary in education. The opponents to this point of view, numerous child psychologists and mental hygienists (and certainly the students themselves), contend that much of the homework contributes little to the child's complete education. If used at all, homework should be well organized before the child leaves school, with the pupil understanding precisely what is expected of him and knowing how he is to do it. As a general rule homework interferes with the recreational development of pupils and the duties normally assigned to them outside of school hours.

The size of classes and seating arrangements relate to healthful school organization. Large classes tend to restrict the individual freedom of expression so essential to the success of modern education. In congested classrooms the teacher must be concerned with the group as a whole rather than with individual personalities. The instructor often employs tests and other means of static measurement to give him information that might be obtained better through observation and analysis of specific pupil strengths and weaknesses. Behavior problems increase in the crowded classroom with the dull or overactive child receiving the lion's share of the teacher's attention. Adjustable and movable seats and tables contribute to healthful school living, especially with frequent inspections to ensure that they fit the child.

The building principal who maintains the proper liaison between the school and the home utilizes one of the most effective techniques of approved organization. Oftentimes parent-teacher associations serve the twofold purpose of acquainting parents with school activities and of obtaining public support for worth-while school ventures. Report cards sometimes give parents an unintended impression of the avowed

purposes of education and stimulate parental opposition to rather than support for the planned experiences of the school. Conferences with parents often dispel misunderstandings and have the added advantage of determining ways of action beneficial to the pupil in which both the home and school assume their respective functions.

The Health of Teachers and Other Employees. An important feature in healthful school living concerns the health of teachers and other employees. A large part of the responsibility in this issue belongs to the administration, although the teacher or custodian must do his part to maintain health and vigor. In the past attention has been focused on the teacher's health only in relation to the welfare of children who represent the fundamental reason for having schools. The newer emphasis, while giving due recognition to the effect of the teacher's health on his dealings with pupils, applies with equal force to other employees who come into contact with students—principals, supervisors, attendance officers, physicians, nurses, clerks, custodians, food handlers, bus drivers, and others.

All health services recommended for or made available to pupils should be equally available to school employees. If school policy establishes an annual health examination for pupils, the same policy should affect administrators, executives, teachers, cafeteria directors, custodians, and bus drivers employed by the board of education. If school policy directs that the education department shall not engage in treatment beyond first aid but shall use all available means to encourage children to have defects corrected by family physicians, then employees should have their defects corrected at personal expense and without delay. If the principal of a given building has established a plan for dismissing pupils who become ill at school, an equivalent plan excludes teachers and other employees found unfit to continue with their regularly assigned duties. Programs of health services devised for pupils always serve education best when similar administrative policies and procedures apply to the employed personnel.

Many school systems have adopted policies relating to the health examination of teachers. Oftentimes these policies state that teachers shall provide a certificate of sound health as a condition of employment and present evidence of subsequent examinations at periodic or stipulated intervals. The best policies of this nature usually result from cooperative efforts wherein the administrators, teachers, and medical advisers work together to formulate a plan agreeable to and understood by all of them, since the plan applies to all employees. The practice in some schools of requiring periodic health examinations (including chest

X rays) of teachers but of excluding administrative personnel and others is not only undemocratic but unjustifiable from the standpoint of properly administering the health program. The deleterious effect of ill teachers in dealing with pupils is no more real than the harmful effect of sick administrators in their relationships with teachers.

Administrators must assume the major responsibility in providing safe and sanitary working conditions for teachers. No teacher can do his best work in a slovenly and unattractive classroom. The physical educator or instructor of industrial arts who spends time worrying over the safety of his equipment dissipates energy better directed toward the improvement of instruction. Once the administrator has provided facilities and equipment which meet approved standards of safety and sanitation and has established procedures for maintaining them, the teacher and pupils have the responsibility of using these facilities and equipment in a safe and sanitary manner.

Problems of salary schedules, teaching loads, tenure and retirement, sick leaves, and sabbatical leaves—all represent administrative matters affecting the healthful school living of teachers. Recent salary increases, although pointing in the right direction, still leave education as an underpaid profession directly or indirectly responsible for much of the ill health among teachers. Besides improving the health of employees, better salaries doubtless will attract to the profession young men and women of higher potential competency and professional qualifications. Teaching loads bear directly upon salary schedules; the administrator who raises teachers' salaries and increases the teaching load deserves the same kind of condemnation as the teacher who complains about his heavy schedule yet neglects his professional duties to accept out-of-school employment. Tenure and retirement plans sponsored by professional organizations have gone a long way to protect the health of teachers; in many respects these plans compare favorably with those adopted by leading industrial and commercial agencies. Although a few teachers may abuse the privileges embodied in sick leaves, the principle behind them remains eminently sound. They encourage teachers to remain at home when ill; the plan should contain broad cumulative features. Sabbatical leaves, available to certain university professors, are becoming more common in public schools. The health values of sabbatical leaves for employees every 7 to 10 years represent an excellent financial investment for any school or college.

The above discussion deals largely with administrative responsibility for the health of school employees. Of course the teacher or principal himself must do his part to maintain a high standard of health and vigor.

The college or university where he received his professional preparation should have given him scientific knowledge and wholesome attitudes about healthful living. He should make use of these knowledges and attitudes in maintaining mental and physical fitness. He must live a broad and well-balanced life, seek company and associates apart from persons in his own profession, and intersperse hard work with periods of rest and relaxation. Most teachers and principals need a good hobby.

Fig. 14. Every teacher needs a hobby.

When the administration gives appropriate attention to factors of healthful school living and employees accept their personal responsibilities, education becomes one of the most healthful professions presently available to the young men and young women of America.

Teachers and Pupils. The gradual though persistent change in viewpoint that education seeks to mold the lives of children rather than to give them subject-matter knowledge immediately emphasizes the importance of pupil-teacher relationships as a significant factor in healthful school living. As this change gains wider acceptance the teacher's personality becomes a matter of prime concern, the development of pupil ideals and appreciations takes on new meaning, a cooperative and friendly atmosphere pervades the classroom, and parents begin to renew

their interest in education as a worth-while community enterprise. While teacher-pupil relationships in the kindergarten and lower grades largely determine the quality of education, these values are only slightly less apparent in secondary schools and colleges.

Wholesome relationships or experiences depend upon the planned organization and conduct of school activities and involve both administration and instruction. A report from the State of New Jersey summarizes the issue: [4]

> The school cannot provide experiences and an environment which will contribute to desirable emotional development unless it is staffed with emotionally healthy teachers and administrators. Teachers are the most important factor influencing the emotional and social environment of classrooms. From a negative point of view, the emotionally unstable teacher exerts such a detrimental influence on children that she should not be allowed to remain in the classroom. The teacher with an uncontrollable temper, or one severely depressed, markedly prejudiced, flagrantly intolerant, bitingly sarcastic, or habitually scolding, may endanger the emotional health of children as seriously as one with a communicable disease endangers their physical health. Effective health guidance of children is successful to the degree that they are taught by teachers with well-adjusted and wholesome personalities. In this respect all who deal with children are their teachers.

The efficient teacher keeps in mind the total development of his students. He widens their learning opportunities through personal guidance and group participation. He recognizes the importance of his personality and appearance in creating a wholesome school environment.

The teacher's personality sets an example which students often imitate either consciously or unconsciously. If he radiates poise and self-confidence, even the dullest pupils try to emulate him. If he has good posture, few of them will slouch. If he shows fatigue with a drawn expression about the mouth, some of them probably will give evidence of nervous tension. If he is friendly and sympathetic, they will practice similar virtues. If he is a sarcastic and domineering individual, they are apt to bully younger or smaller children. If he is clean and neat in appearance, they try to avoid slovenliness in their dress. If he appears emotionally unstable, they sometimes develop traits of irritability and depend on fits of temper rather than upon reason to emphasize their point of view. If he has acquired a fine sense of balance between work

[4] "The School Health Program," p. iii. Trenton: State of New Jersey, Department of Education, Commissioner's Committee, 1947.

and recreation, few of them will follow the course of all work or all play. Mental hygienists and psychiatrists long have recognized the importance of the teacher's personality as a guiding influence in the education of youth, a factor deserving further consideration by employing authorities and teacher-education institutions.

Notwithstanding the attention given to the methods of teaching in most schools and colleges of education, and the limited emphasis on the improvement of personality, methodology and personality go hand in hand. The teacher who would overcome fear of examinations by pupils, for example, must have overcome his own fears. The self-centered and reserved teacher often has difficulty with methods designed to inculcate habits of group activity among pupils. Methods of teaching relate to the objectives sought quite as directly as to the subject matter or materials of instruction; in fact objectives, materials, and methods are so closely interrelated that all of them must be considered jointly in the process of education. In the modern school with modern objectives, the old philosophy of discipline as corrected or directed development gives way to pupil appreciation for the consequences of his acts and a willingness to accept the responsibility for them. In the final analysis, proper discipline leads to the elimination of fears and to the development of self-confidence and self-direction.

The classroom environment has much to do with the effectiveness of healthful school living. The role of the teacher in creating a wholesome atmosphere within the classroom or on the playground exceeds the functions normally assumed by school architects, administrators, and custodians. The competent teacher does not merely adjust himself to improper lighting or cleanliness, but attempts to improve the environment. If the problem relates to good housekeeping, for example, the teacher knows what his responsibilities are, and whether he should correct the condition without delay or bring the problem to the attention of constituted authority. A visit to another classroom, gymnasium, or laboratory often sharpens a teacher's observations to the inadequacies of his own school environment. The classroom or laboratory atmosphere should exemplify comfort and sanitation.

Besides the teacher, many other persons contribute to the success of pupil-teacher relationships. The superintendent and principal must properly organize and equip the school. The health-services staff will advise pupils referred to them with health problems. Special teachers and supervisors often have better opportunities to correct certain specific deficiencies among children than the regular teacher. The custodian will attend to the technical and major problems of heating,

lighting, and cleanliness. Even the driver of the school bus may assist in inculcating habits of safety, courtesy, and helpfulness to others. The health department will attend to the control of contagious diseases. The welfare department has the responsibility for helping needy cases to obtain proper food, clothing, or medical aid. Most parents are willing to cooperate if given the opportunity, and if they are informed concerning the assistance desired of them. And the pupils themselves can render valuable assistance in promoting desirable conditions about the school.

The teacher who truly understands the principles of education in a democracy helps his pupils to develop wholesome ideals concerning a hygienic and sanitary environment, to respect public property and the possessions of others, and to demonstrate proper regard for personal and public safety. The basic element in such democratic learning involves first the respect for self, and then respect for the personality of others. The child who learns to think in terms of "this is *my* school" or "this is *my* classroom" begins to take an active interest in protecting and improving these facilities. The pupil who knows how to work with others in making the school a happy and healthful place in which to live takes an important step toward becoming a good citizen in the community.

Summary

Healthful school living includes the appropriate measures adopted by educational authorities to ensure a wholesome environment for pupils and employees. It deals with the construction and maintenance of safe and sanitary school plants, relates to the organization and conduct of a school program aimed to protect and promote the health of students and employed personnel, and serves as an effective laboratory for vitalizing health and safety instruction. In brief, healthful school living means putting into practice the fruits of scientific discovery and invention made available through the years for the improvement of school plants and processes.

Economic, political, and social forces often affect the selection of an appropriate school site. Property values near the proposed location have a tendency to soar above previously estimated values. Political influences may encourage the purchase of a site unsuited to desirable educational pursuits. Socially prominent persons may object to the location of schools some distance away from their homes or in surroundings regarded as undesirable.

Years ago the average school building was erected on a small plot of land without adequate facilities for physical education and recrea-

tion. State building codes now provide for spacious outdoor play, gymnasiums, auditoriums, music rooms, and swimming pools. The growing significance of education for leisure makes all of these facilities as necessary as classrooms and laboratories. The trend toward wider utilization of school buildings and grounds for community functions strengthens the argument for the inclusion of these facilities in the original plans.

The elevation of custodians to a position of prominence in schools represents a development of the present generation. The qualified custodian has special preparation for his work, uses approved methods to maintain school buildings in accordance with scientific standards, keeps abreast of new methods as they appear in technical literature, appreciates the need for giving efficient and cooperative service, and realizes that his position carries with it serious responsibilities affecting the health and welfare of students and teachers. In the smaller elementary schools he may be the only man available to whom the older boys go for advice; hence the need for a custodian of high moral character and a sincere and wholesome interest in the problems of youth. In a well-organized school custodians are chosen with the same care and attention given to the selection of teachers or to planning the curriculum.

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The attitude of the principal largely determines the spirit of the school. The crusty and dictatorial executive with steadfast rules often has on his hands a group of teachers fearful of making mistakes, and many children who dislike school or regard education with suspicion and distrust. Friendly cooperation and active participation by teachers and pupils best serves the purposes of education.

An important aspect of healthful school living concerns the health of teachers and other employees. Problems of wholesome working conditions, salary schedules, teaching loads, tenure and retirement, sick leaves, and sabbatical leaves affect the health of employed personnel. The employee has the responsibility of maintaining a high degree of mental and physical fitness. He must live a broad and well-balanced life,

seek associates apart from persons in his own profession, and intersperse work with recreation.

The pupil who has gained respect for himself and for the personality of others and who has learned to work with others in making the school a happy and healthful place in which to live has taken an important step toward becoming a good citizen in the community.

The mutual interrelationships of healthful school living, the health services, and health and safety instruction largely account for the present trend to combine these programs into the larger administrative term, health education. Further consideration of these relationships, with respect to health and safety instruction, appears in the following chapter.

Questions and Problems for Discussion

1. Make a list of the broad, general headings that relate to healthful school living. From this list trace the relationships of healthful school living to the health services and to health and safety instruction. From these relationships formulate a principle or administrative policy showing the need for grouping these programs to effect a well-rounded program of health education.

2. Explain how healthful school living relates to housing, both directly and indirectly. With respect to health education, discuss the basic principle that the school should not attempt to usurp the prerogative of the home, but sound education helps to make the home a better place in which to live. In what respects have the schools complied with this principle? Have the schools ever violated this basic concept?

3. Assume that the board of education in your district plans to erect a new school building. What groups within the district should have a voice in the plans? What assistance might be obtained from sources outside the district? In your opinion are the two terms "beauty" and "adaptability to purpose" (*a*) always in conflict, (*b*) seldom in conflict, or (*c*) never in conflict? What should be done in case the problem of conflict arises?

4. Suppose you are in charge of a school-health program and custodial services come under your direction. Prepare a check list for the qualifications required of persons selected for this work. Organize these items on the basis of a total scale of 100 points, giving the proper value to each item.

5. Use the standards for approved school lunches contained in the chapter, or prepare a set of standards more satisfactory from your point of view, and devise a scale for evaluating the school-feeding program similar to the plan described in Question 4 above. From this scale write a statement of principle for use in the organization and conduct of school cafeterias.

6. What factors with respect to maintaining a healthful school program properly belong to the superintendent and principal? After listing these factors, state briefly the administrator's responsibility in each of them.

7. In maintaining a healthful school program, what elements apply primarily to teachers? What are their responsibilities in each of these elements?

8. Obviously students have a part in maintaining a healthful school program. What is it, and how may the administrative or instructional staff evaluate the success of pupil participation?

9. Should the state establish certification or licensing standards for custodians, food dispensers, and bus drivers in a manner similar to standards now operative for teachers and administrators? What factors or forces would support this issue? Oppose it?

10. Discuss the arguments pro and con with respect to state aid for healthful school living on a par with such aid for strictly educational activities. What changes, if any, are indicated by your answer?

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CHAPTER 9

HEALTH AND SAFETY INSTRUCTION

Explanatory Introduction. This chapter sketches briefly the history of health and safety instruction to show how certain forces helped to shape the development of this movement and to explain the residual effects of frequent and oftentimes basic change. The place and purpose of health and safety instruction in public schools and colleges follow, together with principles underlying the organization and teaching of this program, to round out the essential features of this important division of health education.

At times the reader may question the expediency of repetition that sometimes appears in the discussion of concepts relating to different sections. This intentional procedure attempts to avoid redundancy but to include concepts in their natural setting and to emphasize seemingly worth-while points of view.

Brief Historical Summary. The casual school administrator looks upon health and safety instruction as a mere infant in comparison with the older subjects of the curriculum. Yet health instruction may lay claim to an ancestry that dates back to the earliest days of public education; and throughout the intervening years its family name has changed at intervals to befit the diversified streams of pedagogical thought that have colored its lineal heritage. Few programs now occupying a place in the schools enjoy so rich a historical background as health instruction, and perhaps none of them has experienced greater transformation.

The earliest form of health instruction was physiology. Textbooks in this subject, written almost exclusively by physicians who attempted to translate medical anatomy and physiology into terms comprehensible to the adolescent mind, contained a wealth of academic information illustrated by line drawings of isolated body parts. Pupils learned to trace the circulation of the blood and to name various bones with the same impersonal feeling with which they recalled the products and climatic conditions in New Guinea. The physiology and geography of the time, like all other subjects, followed the general pattern laid

down by Bacon that "knowledge is power." A lively pressure group had convinced the school authorities that children should learn the rudiments of anatomy and physiology, although the majority of parents looked upon the normal functioning of the human body as a subject too vulgar for the minds of children to contemplate—if they should happen to relate such learning to their own lives. The decorous teachers of the day seldom gave parents cause for worry on this account.

For one reason or another interest in physiology began to lag near the end of the nineteenth century. History fails to reveal the precise cause for this growing indifference although several factors may have contributed. For one thing, the names in anatomy and physiology were hard to pronounce and to spell; no harder certainly than "Mississippi" and "Constantinople," but these latter words dealt with culture, the pure aim of education. Another reason may have been the inadequate preparation of teachers—a common recourse when other argument fails! A few overzealous teachers tried to associate the concepts of physiology with the lives of their pupils and received prompt reprimands from the official school visitors. Doubtless the prevailing idea that the mind and spirit represented lofty human endowments whereas the body was regarded as base and mean contributed to the practical eclipse of physiology near the beginning of the present century.

About this time, two fortuitous events occurred which practically saved the day. A strong pressure though minority group of clear-thinking men and women succeeded in convincing the educational administrators that youth should learn how to keep well and to avoid sickness and untimely death. Armed with meager data about the increasing rates of mortality and morbidity, and other figures which showed the trend toward urbanization with its accompanying health hazards, this group proposed a redirected emphasis on physiology and even a new name—hygiene.

Quite by chance another pressure group, stronger than the first, became aroused over the increasing consumption of alcoholic beverages which followed in the wake of improved economic and social conditions attending the industrial revolution. This group, the Woman's Christian Temperance Union, stormed by the educational folk on its way to state legislatures where more specific laws were passed compelling the schools to teach the deleterious effects of alcohol than had been passed on any other single health issue. The record of this group still marks an all-time high! Faced with the responsibility of adding temperance to an already crowded curriculum, educators solved the

problem by combining the subject with hygiene, a solution which seems to have benefited all concerned.

Hygiene soon gained a respectable place in the college curriculum and became a core freshman-year subject. Under one or more of the various titles of "freshman hygiene," "personal hygiene," and "community hygiene," both teachers and students began to take an active interest in improved healthful living, even though the emphasis remained on the accumulation of knowledge. Physicians continued to write the textbooks, with most of the instruction given by teachers of physical education or doctors recruited from the college medical staff. Most of the present health instruction in colleges is called "hygiene," and is presented with an extensive array of textbooks and other materials to assist students and teachers. Many of these courses and texts need strengthening because of the rapid development of health instruction in public schools. Too often college freshmen look upon hygiene as a snap course. Within the past decade a number of colleges have enriched their offering in this field by the inclusion of more learning experiences dealing with home and family relationships, mental and emotional adjustments, and community health.

Hygiene braved the competition of other subjects in public schools from around the turn of the present century until after the First World War. The number of new subjects and new materials introduced into the schools during this period naturally forced others into the background. The old-line or solid subjects withstood the transformation rather well, and several of the newer ones gained a firm foothold; but a warmed-over subject like physiology, even though it had a new name (hygiene) and a few new techniques, experienced difficulty in getting itself established. Temperance preserved the semblance of hygiene in many schools, since representatives from the local chapter of the Woman's Christian Temperance Union frequently reminded the school authorities of their legal obligation in this matter, and members visited the schools at periodic intervals to inspect the instruction given. School administrators reasoned that since they had to teach temperance, they might as well offer a little hygiene to round out the term's course. As so often happens, the teacher-education institutions lagged behind and failed to give prospective teachers methods and materials courses in hygiene comparable to those offered in the so-called "solid subjects." For these reasons and others, public-school hygiene during the first part of the present century must be characterized as incidental, academic, and ineffectual.

The storm of public protest which reached the ears of educators immediately after the First World War on account of the large number of young men found unfit for military service again focused attention on hygiene and its associated though separate program of medical inspection. Aroused public officials demanded an answer to such questions as, "What has been accomplished by the millions of tax dollars spent to examine school children for defects?" and "Why haven't hygiene courses in schools taught children how to live healthfully?"

The impact of this protest led to a revitalized effort among educators and the birth of a new term, "health education." Numerous states passed laws to strengthen this program in public schools. Health education brought together the previously isolated programs of medical inspection, hygiene, and others, and listed the component parts as (1) health service (later to become health services), (2) health supervision (the forerunner of healthful school living), and (3) health instruction (a new name, with different emphases, for hygiene).

During the prosperous third decade of the present century, health education flourished in terms of both changed educational theory and adaptation of theory into actual practice. With reference to health instruction this meant recasting the objectives of the program, adding time in the daily schedule for health teaching, preparing new courses of study and basic texts, improving the teaching materials, and many other innovations. Unfortunately, except for a few persons who chose health education as a profession, the teacher-education institutions continued to graduate young men and young women only slightly better qualified to give instruction in health than their predecessors.

The depression years that followed witnessed a slackening of effort in all aspects of health education, with health instruction relegated to an inferior position in most schools if not totally neglected. In a few schools and colleges, however, health instruction held its own and even advanced during the depression years.

At least two factors may have been responsible for the emphasis given to health education in general throughout these trying times. One factor related to the increasing number of educational administrators who observed in health education a significant area associated with improved living conditions in the home and community, and who visualized health education as a particularly important element in protecting and enriching the lives of people bent on obtaining the bare necessities for existence. The second factor dealt with a new pressure group which insisted that the schools assume a greater responsibility

for safety education. For some years this group had furnished the appalling evidence that too many preventable accidents occur with unremitting frequency, and the depression years finally witnessed the organized inauguration of safety education in schools. Not knowing just how to fit this innovation into an already crowded curriculum, and faced with rapidly shrinking budgets, many school administrators followed the expedient procedure of associating safety education with health education, and the revised name for this body of experiences became "health and safety instruction."

And then came the Second World War with evidences of physical unfitness similar to those disclosed in 1917. Public-minded citizens and general educators alike heaped condemnation on the health services and health instruction for results classified as failure! In their haste to find someone upon whom to place the blame, many persons overlooked the fact that the principal causes for military rejections pertained to defects unpreventable by either school-health services or by health instruction. A further truth deserves emphasis by the statement that neither health services nor health instruction had been given the opportunity to demonstrate the real values inherent in either program. The social and economic lag of the country throughout the depression years was too often reflected in a soft and desultory educational system. But the carry-over emphasis of this condemnation on health and safety instruction and the health services may foretell greater achievements in future years.

The future of health and safety instruction must remain in doubt pending the expressed willingness of the public to support this educational venture, the active interest of school administrators who must provide the necessary organization, and the efforts of teacher-education institutions responsible for the preparation of classroom teachers and health specialists. Already notable achievements deserve acclaim in an observably aroused public opinion toward improved health and safety instruction, time and facilities provided for this program by school administrators, and attention being given to the preparation of qualified teachers—the last stimulated in part by grants of funds from philanthropic organizations.

Health and safety instruction represents a sound educational procedure. Its basic elements and proposed plan of operation coincide with the avowed purposes and accepted conduct of education. In fact, approved principles of health and safety instruction so realistically affect the lives of both children and adults that, given the opportunity, health

and safety instruction could become the hub around which the educational wheel revolves.

Definition and Purpose of Health and Safety Instruction. Satisfactory definitions of health and safety instruction vary with respect to precise phraseology, although the essential features follow a pattern established several years ago. Health instruction aims to assist the student in acquiring desirable habits, wholesome attitudes, and adequate knowledge relating to personal, community, and racial health.[1] Health and safety instruction utilizes the life experiences of youth and adults, guiding these experiences toward intelligent self-direction and community group action for improved personal and social welfare.

Inherited capacities and factors in the environment affect the health of a person. Health and safety instruction rightfully takes cognizance of these forces as it integrates school experiences with actual living in the home and community. Within the school itself health and safety instruction combines the educational features of health services and healthful school living and includes the planned activities of direct or incidental teaching.

A prominent committee in 1930 outlined the general objectives of health education which have withstood the test of time. With slight modifications to comply with current educational practices, these objectives continue to serve as a worthy guide to the avowed purpose of health instruction: [2]

1. To guide children and youth in the conservation and improvement of their own health.
2. To assist them in establishing the habits and principles of living which, throughout their school life, and in later years, will assure that abundant vigor and vitality which provide the basis for the greatest possible happiness and service in personal, family, and community life.
3. To influence parents and other adults, through the health education program for children, to better habits and attitudes, so that the school may become an effective agency for the promotion of the social aspects of health education in the family and community as well as in the school itself.

[1] J. F. Williams and C. L. Brownell, "Health and Physical Education for Public School Administrators–Secondary Schools," p. 60. New York: Bureau of Publications, Teachers College, Columbia University, 1931. (Adapted from definition proposed earlier by T. D. Wood.)

[2] Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, "Health Education," p. 13. Washington: National Education Association, 1930.

4. To improve the individual and community life of the future; to ensure a better second generation and a still better third generation.

Organization for Health and Safety Instruction. The superintendent or principal, responsible for the organization of all educational experiences, needs to recognize the relationship existing between the entire school program and effective health and safety instruction. The teacher and nurse who prepare the child for the health examination reduce the fear he may have of strangers and enable the physician to make full educational use of the experience. Sanitary drinking fountains and lavatories at school help to inculcate desirable habits and attitudes toward these facilities at home and in the community. Proper attitudes and skills concerning good nutrition seldom develop among children exposed to a school cafeteria that violates the accepted principles taught in classes. Severe discipline and a crowded curriculum are not conducive to good mental hygiene, notwithstanding the excellent treatment given to mental hygiene in most health textbooks. Health and safety instruction per se deals with learning experiences, but the various affairs of the school serve as practical laboratories—for better or for worse.

Every person in the school has responsibilities in health and safety instruction, in addition to the teacher or teachers directly assigned to this function. The manner in which the principal organizes the school affects the mental hygiene of children. The custodian does more by example than by precept in the way he cleans and cares for the building. The teacher of industrial arts demonstrates the safe handling of tools. Science instructors, especially, have a wealth of health material in the subject they teach. In the elementary school, the chief responsibility for organized health and safety instruction rests with the classroom teacher. Secondary school children deserve specialized instruction in health and safety by specialized teachers, the same as for other subjects. In both elementary and secondary schools, either health coordinators or health supervisors greatly increase the effectiveness of instruction.

Relation of Purpose to Interests and Needs. Effective organization for health and safety instruction follows the general plan of normal growth and development, with a working knowledge of individual differences. In keeping with an understanding of growth and development and individual differences, the interests and needs of individuals and groups gradually emerge.

Specifically these interests and needs are revealed in the study of children and communities. The efficient teacher or principal asks himself a number of questions and finds answers to these problems. What are the cultural, economic, and social resources of the community and of pupils in the school? What are the health problems of these children as disclosed by the health appraisal and records of illness? What do careful observations show with respect to habits and skills of cleanliness, nutrition, posture, physical activity, use of the special senses, control of infections, emotional and social adjustments, and safety? What are the child's interests as expressed by daily activities? What additional evaluation procedures, besides those now employed, might reveal particular strengths and weaknesses of value in health and safety instruction? The immediate purpose in health and safety instruction always relates to the interests and needs of children for the improvement of their own lives and for the benefit of society.

Cooperation with Home and Community. Principals and teachers have a right to assume that parents and the community at large want the best development in children the schools can produce and that parents will cooperate to attain this goal. The teacher soon develops a keen awareness that most health and safety practices involve the home and that the formation of proper habits and attitudes entails cooperative relationships between the home and school.

But the parents may not know the health and safety objectives of the school or the techniques employed to realize these objectives. Most parents constantly face the problem of harmonizing child needs and interests with adult desires; and when these needs remain obscure, the parent may arrive at the conclusion that rules learned in organized classes apply to the school but not the home.

Effective health and safety instruction depends as much, if not more, upon intelligent home and community care as upon guidance at school. To this end the school, home, and community must agree concerning the specific health and safety responsibilities each will assume. This agreement might well include the materials of instruction. Such a procedure tends to prevent later conflicts between the school and the home and immediate conflicts in the minds of pupils who may learn one thing at school but practice quite another at home.

The great need for parent- and community-health education poses a serious problem for boards of education and boards of health. Among the various ways proposed for attacking this problem, the following appear to justify consideration: (1) organized health and safety discus-

sions at scheduled meetings of parent-teacher associations, (2) parent-study groups, (3) adult-education classes, and (4) special public demonstrations of health and safety projects that illustrate specific types of work, conducted by the schools or by health organizations in the community.

Direct versus Incidental Teaching. For purposes of this discussion, direct teaching means a scheduled time for health and safety instruction, a planned organization of subject-matter experiences, a progressively arranged body of content (habits, attitudes, skills, and knowledge), and an appropriate means of evaluating results in terms of objectives sought. Incidental teaching means focusing the attention of the class on health and safety problems as they arise in the normal course of school events—largely a matter of unplanned experiences.

Direct and incidental teaching supplement each other; neither by itself will suffice, both are important. The planned experiences are the ones which receive attention, command the respect of pupils and teachers, and lend themselves to accurate evaluation. Teachers and pupils prepare for the planned experiences; the incidental ones too often receive a nod of acknowledgment and little else. Incidental experiences seldom fit into a logical sequence in the promotion of normal growth and development. On the other hand, incidents may arise in the study of problems quite apart from health that present excellent opportunities to emphasize a concept previously explored in health and safety instruction or to introduce a timely topic for future exploration. The qualified teacher embraces such opportunities for unifying the experiences of pupils.

Health and Safety Instruction in Elementary Schools. Under ideal conditions health and safety instruction in elementary schools represents a technique of living rather than a teaching subject in the curriculum. Broadly conceived, instruction in this area deals with living healthfully and safely each day within the surroundings and experiences associated with the home, school, and community and meeting new situations as they arise according to approved rules of conduct. In a narrower sense the normal growth and developmental interests of children determine the program of health and safety instruction in elementary schools.

In those schools where the total curriculum rests upon the needs and interests of children, rather than upon subject matter, health and safety instruction becomes a continuous process associated with nearly

all planned or unplanned experiences.[3] Under these conditions, no special time appears on the daily schedule for instruction in any specific subject, neither do separate courses of study outline the precise activities within a particular teaching area. This procedure facilitates the organization of experiences within a setting more comprehensible to younger children, and allows for greater flexibility in the utilization of problems or materials as they arise in the home, school, or community. In this type of school, problems relating to health and safety immediately command respect, if the teacher is properly qualified, because education within this area has few deferred values.

The traditional school with its grades and subjects presents a different picture of organization and conduct. Here, the courses of study serve as a guide to ensure that teachers cover the usual experiences determined for children of a particular age and developmental level. The various courses of study supplement each other to enrich the total educational offering and allow for situations arising naturally in the home and community. The competent teacher makes use of these experiences in health and safety as well as in other subjects because of their timeliness and unique educational value.

In the lower grades health-instruction experiences center primarily around the child himself and his associations at home or at school. The qualified teacher utilizes the daily experiences of children for health and safety behavior, encourages the practice of desirable health habits, stimulates appropriate health attitudes, and helps the child to develop an understanding of his environment as it affects his own health and safety and the welfare of others.

The methods employed to deal with a given experience depend upon the needs and interests of the individual or group, availability of materials, and the ability of the teacher. The most successful single method appeals to the child's interest in growing up. On the other hand, health texts or readers may suggest a worthy approach, contain the essential information couched in a delightful story, and suggest activities that enable children to develop creative powers of expression.

Numerous opportunities within the daily experiences of lower-grade children contain valuable health implications. Problems associated with illness and cleanliness arise in connection with the daily observation of pupils by the teacher. Things that the child should do for himself or should have done for him become evident in the normal course of

[3] As used here, the curriculum represents the sum of courses of study in various individual subjects or programs.

weighing and measuring, school feeding, play periods, and in the use of lavatories or drinking fountains. Safety instruction relates to experiences on the playground, use of school utensils, or travel between the home and school.

Health instruction in the intermediate grades emphasizes the approaches employed for younger children, includes more actual health knowledge indicating the reasons why persons should act in a prescribed way, and shows how intelligent persons meet new and changing conditions in a satisfactory manner. The program suggests flexibility in recognizing problems as they arise and in utilizing the health factors contained therein.

Children in the upper grades should have a progressive program of health and safety instruction with materials and experiences adapted to their levels of interest and comprehension. At this time, a wider variety of activities and projects are introduced, with children given the opportunity to assist in planning and executing these activities. Pupils of this age readily learn to rationalize and to evaluate individual and group practices.

Opportunities for health and safety instruction come naturally in the conduct of many school activities for upper-grade children. The social studies contain a wealth of activities involving the health of individuals and groups. The biological sciences provide factual information underlying the reasons for healthful living. Much of the informational and recreational reading either directly or indirectly alludes to health and safety principles. Nearly all physical-education classes contain an underlying health and safety motif.

The successful teacher in the elementary school establishes a general aim and a series of objectives for health and safety instruction. The aim may encompass the concept of healthful and safe living for each pupil in the class. The various objectives relate to the specific experience under consideration and point in the direction of accomplishing the aim. Evaluation of success is based upon the degree of improvement observed among children. More specific evaluation will entail measures of habits, attitudes, knowledge, and skills. Diagnostic health-knowledge tests and interest inventories serve a worthy purpose.

Time allotment for health and safety instruction in the elementary grades depends upon the type of school organization. In activity-experience schools sufficient time is required to meet the growing health and safety needs and interests of youth at this age. In schools organized by subjects the time approximates that given to any major subject in the curriculum.

Health and Safety Instruction in Secondary Schools. The secondary school represents a most significant place for effective health and safety instruction, frequently overlooked by administrators interested primarily in the traditional subject-matter curriculum. Obviously the emphasis on college preparation, despite the majority of students for whom the high school constitutes the termination of formal education, accounts in part for this neglect of health and safety instruction.

Generally speaking the program for junior and senior high schools deals with the present and anticipated needs of young men and women. The average adolescent feels insecure, even though the defense mechanism of bravado makes him appear just the opposite, and he needs wise and sympathetic guidance to help him attain his primary goal—to become an efficient and attractive adult.

The youth of secondary-school age naturally craves adventure and manifests a keen interest in things going on about him. His self-centeredness gradually extends to affairs of wider scope in which he represents the central figure, and finally problems of the community and nation take on special significance. He is inclined to attack these larger problems with the enthusiasm and intolerance of a professional reformer. Concern for his own appearance and personal welfare may parallel an abiding interest in great safety and temperance movements, community and national health and fitness, social and economic relationships, and the mysteries of heredity and eugenics.

In broad terms the program for secondary schools includes personal and community hygiene, preparation for marriage and parenthood, knowledge of hereditary and environmental factors affecting health, and welfare associated with work and leisure. More specifically, this program relates to acceptable and satisfactory adjustments to marked body changes, an understanding of variations in the growth and development of the sexes, an appreciation of the need for wholesome attitudes relating to sex behavior, scientific knowledge concerning superstitions and self-medication, the place of private medical practice and governmental agencies in protecting the health of families, the effects of bad housing and working conditions, the importance of developing sound leisure habits and skills, and the values of health in economic and social security.

Effective health instruction in secondary schools requires well-defined administrative policies. First of all, health instruction deserves a position of prominence at least equal to that accorded other subjects in the curriculum. This indicates a daily period in the senior high school for at least one semester, and preferably for two semesters; it

also indicates a favorable hour in the school schedule and credit toward graduation.

The New York State Education Department supports this point of view in a published statement: [4]

> The Board of Regents at its meeting today . . . adopted the report of a special committee defining the required subjects for pupils in secondary schools. . . . These subjects are designed primarily to prepare pupils to meet their citizenship responsibilities.
>
> In the upper four-year high school course the requirements are to be: four years of English, three years of social studies including not less than one year of American history and government, one year of science, and one year of health.
>
> These requirements constitute only the basic minimum studies fixed by the State. It is emphasized that local schools may add to the requirements in any of these subjects.

Only qualified teachers and counselors should assume responsibility for health and safety instruction in secondary schools. An increasing number of special teachers find their way into the better schools, although with additional preparation good instruction may be expected from nurses, physical educators, home economists, biologists, and social scientists. The health counselor coordinates the entire school-health program, teaches certain classes, and supervises the instruction given by other teachers.

Approved methods of instruction follow the principles of general education with the use of practical activities and problems, discussions, reading and study assignments, special lectures, excursions, and most important of all—the example set by the teacher.

The school principal establishes definite coordination, without unnecessary duplication, between specialized health and safety instruction and health experiences emphasized in the biological sciences, social sciences, home economics, industrial arts (safety), and physical education.

Health texts written by persons experienced in general education as well as in the special field have a distinct place in the program. These may be used to supplement the course of study prepared in the local school or to serve as a guide in outlining the essentials of proposed instruction. Most texts and courses of study provide ample opportunities for the inclusion of specific health and safety problems arising

[4] Special passages from a news release by the Board of Regents concerning "Report on Basic Issues in Secondary Education," March 21, 1947.

throughout the year. Texts that explain clearly the structure and function of the human body, contain the essentials of public health, and explore the health and safety problems common to adolescent youth have gained favor in recent years over books of an earlier date which attempted to moralize about health habits and attitudes properly belonging in the elementary schools and which admonished the adolescent youth to live healthfully without giving him the scientific basis necessary for wise and intelligent self-direction.

Evaluating the success of health and safety instruction differs somewhat from procedures normally employed in secondary education. Knowledge may be measured by the customary pencil-and-paper or standardized tests. The two other important aspects of health relate to behavior and effort. Both behavior and effort show how well the pupil makes acceptable use of the instruction given. Continuous observation of student behavior by employed school personnel provides tangible evidence for evaluating the results of instruction. Impressing upon pupils the value of self-checking their behavior and attempting to correct deficiencies found constitute valuable teaching and measuring procedures. Evaluation of effort follows the general plan suggested for behavior.

Health and Safety Instruction in Colleges and Universities.[5] The average undergraduate student in a college or university differs in many respects from the pupil in public schools. For one thing the college student has passed through the awkward age, and his natural maturation gives him an air of sophistication and social maturity. Usually removed from the proximity of parental control, he assumes a feeling of independence—at last he is on his own! His confidential statements to the dean of students or to the medical adviser may reveal his insecurity as he contemplates the world suddenly unfolding before him in ever-widening circles, but to outward appearances he is self-sufficient.

Many college students have enjoyed the advantages of a sound health program at home and in the public schools. Others know little about health and safety either through instruction or by experience. The college has a difficult task to reconcile these two extremes and to follow that basic principle of education, "treat them as they are with reference to what they may become." In this instance they may repre-

[5] This section deals briefly with health and safety in undergraduate institutions for the general student body. The professional preparation of school personnel in health appears in Chap. 12.

sent young men and young women of sophistication with clearly established rules of approved health conduct or youths with growth and developmental standards approximating the average tenth-grade level—and they may become housewives, businessmen, professional workers, or engage in other occupations associated with white-collar vocations.

Despite the fact that the average college student oftentimes has numerous health superstitions and prejudices, he wants to know the truth. His quest for knowledge may lead him to argue controversial health issues upon the basis of unscientific facts; but once he thoroughly understands the proposition and the sound reasons behind it, he may be expected to act in reasonable accordance with accepted principles.

This characterization of the average college student suggests a productive field for the implantation of fertile health roots; seeds that may eventually flower into a beautiful harvest of values to the home he later creates and to the community he finally serves.

The health and safety interests and problems of the college student include those of the high-school junior or senior and some others. The year or two of additional age, together with the different environment, enable him to go deeper into the scientific facts supporting a given point of view and to appreciate more thoroughly his responsibilities as a person and citizen. He wants to know more about mental and social hygiene, the health factors associated with family life, the techniques of selecting a medical and dental adviser, the essentials of public health in matters of sanitation and disease control, and the health and safety elements of various life occupations.

Certain approaches to college instruction prove more advantageous than others. Some instructors make the mistake of preaching and moralizing about health and of harping on health habits that the student should have acquired much earlier in life; the college student will have none of that! The personal inventory approach brings out many fruitful problems in need of solution, assuming that the instructor is able to gain the confidence of his pupils; or these problems may be disclosed to the medical adviser or to the dean of men or women, and transferred to the health instructor for practical use. Most of these problems center around personal and family life, marriage and family relations, gainful employment, and the justifiable support of official and voluntary health agencies. Oftentimes the instructor can pave the way for a discussion of these deep-rooted problems by introducing the matter of housing conditions on the campus, the food in the college

cafeteria, the social affairs designed for the recreation of students, off-campus activities, and others.

College hygiene or health and safety courses are given usually during the freshman or sophomore years. Customary practice in many colleges assigns courses in these years to the younger and more inexperienced staff members. Teachers of college hygiene should be the

FIG. 15. A college course in marriage education.

most capable and experienced men or women on the entire faculty; men and women who understand and are sympathetic toward the problems of students. A student may obtain the wrong answer to a problem in mathematics without hurting him very much, and the attitudes he forms toward a master in English literature can be corrected at a future date without undue harm. But the knowledge he acquires concerning the health and safety factors associated with a vocation may affect him all through life—if he chooses a type of work unsuited to his physical and emotional endowments; and the attitudes he forms toward marriage and family living may easily mark the difference between a happy marital career and a broken home. Again one might say that health, properly taught, has few deferred values.

Health and Safety Instruction in Adult Education. Besides the planned and unplanned health experiences of pupils in the elementary and secondary grades, the school needs to organize for health and safety instruction among parents and other adults. For example, the values of nutritious foods learned in health classes or experienced in the school cafeteria have limited enduring effect if the child continues to eat improper and unattractive meals at home. In like manner, instruction concerning pasteurized or certified milk, a clean water supply, and public safety, becomes largely an academic exercise unless these matters receive appropriate attention by the city fathers.

Years might be saved in improving the total health of the community if the instruction now available to students in schools and colleges were adapted to the needs and interests of parents and other adults. Again health and safety instruction provides one of the best opportunities for bringing together the school, home, and community in an enterprise of benefit to all–both youth and adult.

Teaching Methods. Those who now decry the ineffective methods used in health teaching voice a long-standing criticism. In 1910, Wood wrote, "This is one of the most perplexing problems in education today. No phase of instruction seems more important than to teach the child how to live in a healthful manner. No subject is taught, on the whole, so unsuccessfully." [6] Perhaps the crux of the problem relates to faulty professional preparation and to the special interests of many teachers in subject matter rather than in education as a process of living.

Widespread criticism leveled at teachers generally appears decidedly unfair. In the first place, the accumulation of knowledge consistently marks the primary objective of most schools; promotion and graduation depend largely on the ability of pupils to obtain a passing grade on knowledge tests, and institutions preparing teachers tend to emphasize scholarship both as an indication of professional competence and later as a quality to be instilled in students under their direction. In the second place, with the gradually changing emphasis in education and with improved techniques of preparation, the number of teachers rendering effective service in health and safety instruction increases year by year.

[6] T. D. Wood, "Health Education," *9th Yearbook*, National Society for the Study of Education, Part I, p. 62. Bloomington, Ill.: Public School Publishing Company, 1910.

Basic Principles of Method. Only the bare outline of method justifies attention in a text of this type since no one technique will suffice for all teachers or for a given teacher in all situations. A specific method used successfully by one teacher may prove ineffective in the hands of another; and a technique that accomplishes desirable results with one class, or in one situation, may fail miserably when applied to another group of children or to another problem. The master teacher will experiment with different methods of instruction keeping in mind the objectives sought, the ability level of his pupils, the subject matter or experience at hand, and the best means of evaluating the results obtained.

Good teachers recognize the need for a course of study that serves as a guide to effective instruction. They seize upon opportunities presented by current happenings (an accident on the playground, the kind of food served in the school cafeteria, an epidemic in the community, or a popular radio program) to supplement and complement the course of study. They attempt to maintain the proper balance in the acquirement of health habits, skills, attitudes, and knowledge. They utilize the contributions of biology, chemistry, physics, home economics, social sciences, physical education, and other subjects or services to improve personal and community health.

Purposeful teaching requires a clear understanding of growth and development and the peculiar strengths and weaknesses of individual pupils, along with thorough preparation in health education. Of special significance here are the health status of each pupil; his habits of work, play, and self-care; his ability to get along with others and to make friends; his relationships at home and in the community; and the health behavior he has acquired in previous grades or at home.

Approved methodology must recognize the subservience of the schools to the home, community, state, and nation. On the one hand, this means that health instruction in schools ought to bear in mind the general principles adopted by these outside influences. On the other hand, this means that the schools occupy a strategic position in helping to improve the home and community.

Other basic principles of method are described more fully in the sections that immediately follow.

1. *Interests and Needs.* So much has been written about interests and needs in all educational literature that it might receive limited emphasis here except for the precise application of the subject to health and safety instruction. Properly taught, health finds immediate application to life situations; hence the interests of pupils in the foods

they eat or the games they play quickly lend themselves to practical application under the guidance of a skillful teacher. In like manner, the qualified and observant teacher appreciates the current health needs of his pupils. At first the pupils may or may not be interested in these apparent needs, but the experienced teacher knows a dozen ways to kindle student interest in these problems.

Interests and needs go hand in hand. When a child expresses an interest in some problem, such as a highly advertised food or dental product, the teacher's job is to direct that interest toward the fulfillment of an adjudged need or to redirect the interest toward worthwhile ends. Similarly an apparent need may justify the sharpening of latent interests or even the stimulation of an interest the child may not readily disclose.

These principles of method apply to all teaching but find easier application to health than to some other subjects because of the close relationship between health problems and the normal personal experiences of young men and women. In this respect the teacher of health enjoys a distinct advantage over teachers of higher mathematics, physics, or foreign languages.

2. *Accurate Information.* The swing of the educational pendulum from physiology and hygiene to emphasis on health and safety instruction brought with it certain advantages and disadvantages. On the credit side the changing emphasis made health a more personal and realistic subject or program as the things learned were related directly to the actual lives of those participating in the learning experiences. Instead of studying bones and muscles as academic entities, the relationship of organs and systems to problems of daily living received intelligent attention. On the debit side, the "practical" health instructor often admonished the learner to live healthfully, to eat proper foods, to select a competent health adviser, or to avoid nostrums and quackery without providing the scientific knowledge behind these admonitions.

The rather general shift in emphasis away from scientific backgrounds after 1920 may be attributed to one or more of a number of contributing factors. Any new program proposed as a substitute for an older one, allegedly in disrepute, attempts to formulate policies and procedures unlike those favored by the preceding enterprise or organization—this applies to educational affairs quite as readily as to political parties. Reliance on authoritarianism oftentimes takes precedence over diligent application to an understanding of basic elements, and both teachers and pupils may prefer to accept statements concerning a cer-

tain food or healing device rather than to study the structure and function of the human body to comprehend the probable effect of the nutrient or treatment on the growing organism. Frequently the scientific information contained in older textbooks was couched in such technical language that teachers and pupils experienced difficulty in associating the phenomena with daily health problems. Most classroom teachers, and many so-called specialists, had not received adequate preparation in the scientific background of health; and one may not teach successfully what he doesn't know.

But the fact remains that wise and intelligent self-direction (the ultimate goal of all health education) depends upon sound and scientific knowledge which explains the reasons for accepting or rejecting health practices. Except for very young children, whose limited intellectual experiences do not permit them to grasp the significance of involved scientific phenomena and who need to acquire certain health habits to live normally, accurate knowledge serves as the foundation for the development of worthy habits, attitudes, and skills. Even with young children the simplification of facts, without distorting them, usually yields excellent results in providing a basis for desirable health behavior.

The pupil needs to understand the human mind and body as a unified functioning organism. Such an understanding by both teachers and pupils helps to destroy the existing though vestigial concept of dichotomy between mind and body; it regards man as a living whole, and his behavior in the light of total learning situations. A knowledge of the anatomical and physiological bases for sound health facilitates the development of proper attitudes and habits toward diet, rest, exercise, infections, safety, mental hygiene, social hygiene, home and family living, public-health agencies, professional services, housing, working conditions, and other activities associated with heredity and environment.

Many sciences contribute to the health of man. The biological sciences have made remarkable progress since 1543 when Vesalius wrote "On the Fabric of the Human Body," which first unfolded the mysteries of anatomy. About one hundred years later Leeuwenhoek constructed the first practical microscope. In 1839 Schleiden and Schwann developed the concept of the cell as the unit of living matter. Later discoveries in anatomy and physiology have been no less impressive. Psychology relates to the mental and emotional functions of individuals and contains rich source material for healthful living. Social psychology and sociology explain the peculiar operation of group behavior.

From these and other sources valuable information relating to health instruction may be adapted by teachers and textbook writers in their responsible tasks of guiding the education of youth.

3. *Habits, Attitudes, and Skills.* So much of the current written material on health stress habits and attitudes that brief mention of these will suffice for this section. A habit may be defined as a custom, a practice, or an inclination acquired by repetition and marked by a facility of performance or decreased power of resistance.[7] An attitude represents a point of view or position taken, and indicating action.[8] A skill is characterized by expertness in execution or performance.[9] Skills are seldom mentioned in referring to health although they are especially important in the formation of habits and attitudes.

Good health habits, then, reflect successful teaching in schools, together with opportunities to practice these appropriate responses in the home and community. The essence of habit formation is frequent repetition until the correct response to a given situation becomes automatic, with dissatisfaction accompanying inability to perform the act in the customary manner. All teachers and parents recognize the importance of forming good habits and the difficulties encountered in overcoming bad habits. Among very young children, habitual health performance may be regulated by competent teacher instruction and supervision; older children should be guided in the formation of habits based upon reason that grows out of scientific knowledge.

Attitudes show how a person thinks or feels about a given health problem. Note that an attitude denotes probable action; hence a favorable attitude toward cleanliness or proper nutrition provides the best assurance that the child will develop habits of keeping himself clean and selecting the right kinds of food. In later years these same attitudes may prompt him to take an active part in demanding improved community sanitation or in insisting upon the passage of suitable legislation on food inspection. Further, as he studies the contributions of science to health, he more readily acquires the attitude of the true scientist and looks for documentary evidence in support of claims made in advertising campaigns, newspapers and magazines, and radio programs.

Skill helps in the formation and practice of desirable habits and wholesome attitudes. The young child who acquires the skill to dress and undress himself more easily forms the habit of taking care of his

[7, 8, 9] Adapted from "Webster's Collegiate Dictionary." Springfield, Mass.: G. & C. Merriam Company.

clothes. The person with neuromuscular skills has no trouble with habits of exercise or recreation, and his attitude usually favors provision for public recreational facilities. The young adult with skills in getting along with and influencing people may change the attitude of an entire community toward certain public-health measures. In fact most health attitudes and habits include either directly or indirectly the elements of skill—both during the formative period and in the satisfaction derived from performing the acquired behavior with efficiency.

4. *Evaluation.* Sometimes teachers view evaluation as something apart from method—as a technique applied later to measure the results of instruction. Rightfully employed, method and evaluation are inseparably bound together into a composite pattern with the one supporting and complementing the other.

At the beginning of the school term the teacher seeks answers to a number of health questions. What is the health status of each pupil? What have pupils learned in preceding grades; *i.e.*, what habits, attitudes, skills, and knowledge have they acquired? What are the health conditions in the various homes represented by the class? How does the community provide health protection and care for its citizens? What are the health problems facing this particular group of children? All of these questions involve evaluation to establish an acceptable point of departure.

Throughout the year evaluation plays an important role. At frequent intervals the teacher needs to know the degree of progress made in solving the above problems and others. He may experiment with several different teaching methods and attempt to measure the relative effectiveness of each of them. He may devise tests or plan special observations to evaluate achievement in the objectives listed in the course of study. He may confer with the examining physician, nurses, parents, other teachers, the health coordinator, the principal, or school psychologist to check on the success of procedures formally adopted. These, too, represent techniques of evaluation.

At the end of the term evaluation serves the important function of determining the health progress made by each pupil, and of indicating better ways for conducting the program the following year to achieve even greater success. Evaluation in education is like bookkeeping in business. It provides a record of past accomplishments, shows the present status of the going concern, and perhaps suggests the needs for future change of policy or procedure.

5. *Don'ts in Health and Safety Instruction.* The above discussion deals briefly with a positive approach to health-teaching methods. By contrast, ten of the more common mistakes or unwise techniques sometimes employed by teachers in health and safety instruction may help to distinguish between good and bad practices. Sometimes the technique itself borders on acceptable methodology, but the emphasis given to it illustrates unsound procedure.

Don't expect the impossible. Pupils vary in physical, emotional, and social potentialities in the same way that one child may be intellectually superior to another. Regard for individual differences in heredity and environment helps in the prediction of what may be expected of each child in the accumulation of knowledge, habits, attitudes, and skills.

Don't apply dogmatic rules. The powers of suggestion and persuasion when accompanied by appropriate information usually succeed, whereas threats of dire consequences to follow a broken rule oftentimes fail.

Don't use abstract applications. The positive approach appeals to children and adolescent youth. The study of foods and digestion as an academic exercise seldom stimulates interest; used in relation to growing up for younger children and as an aid in improving appearance with high-school young men and women, foods and digestion have realistic and practical values.

Don't stress the abnormal, morbid, or fearful experiences. Some teachers lay too much emphasis on insanity, accidents resulting in death, and drunkenness. Youth wants life and happiness, and besides some members of the class may have had memorable experiences with one or more of these conditions within their own families. Fears often lead to improper mental hygiene.

Don't refer to the afflictions of a child in the class as an example. The underweight or malformed child appreciates his condition, and doubtless other children already have made an adjustment to the existing situation. Such references usually create a feeling of uneasiness among the entire class.

Don't have children compete against each other. One child may grow taller and heavier than another, more attractive than the person in the seat next to him, or have defects corrected faster than his neighbor for a variety of reasons, most of them beyond his control. The fallacy of one classroom or school competing against another to improve average daily attendance is a frequent illustration of this unwise

practice from a health point of view, even though the practice may yield additional revenue to the community in the form of state aid.

Don't give artificial rewards. Special privileges to pupils who sleep with their windows open or who brush their teeth twice a day may encourage cheating and arouse jealousies. In fact, the practice of health habits among young children constitutes a responsibility of parents, and penalty for failure belongs to the parents not the children.

Don't teach either above or below the intellectual and experience levels of children. The teacher who actually taught the properties of amylopsin, steapsin, and trypsin in the third grade belongs in the same category with the high-school or college teacher who emphasizes washing the hands before meals. Neither teacher helps to instill enduring interests in health.

Don't paraphrase nursery rhymes. Some years ago numerous pamphlets found their way into the schools containing ridiculous parodies on Mother Goose. Almost at once courses of study copied or paraphrased these rhymes, and children were admonished to eat their spinach, as did Little Miss Muffet, or suffer the pangs of indigestion along with Little Jack Horner. The children knew the original rhymes as fairy tales and gathered the impression that the health improvisations were equally fantastic.

Don't set a bad example. The teacher must exemplify his instruction if he expects satisfactory results. If he aims to teach correct habits of standing posture, he must carry himself erect. If he would teach friendliness and cooperation, he must like people and work cooperatively with them. The surest way to inculcate enduring habits and attitudes of healthful living among students is for the teacher to personify the objectives of his subject.

The Program of Study. Irrespective of teacher qualifications, health and safety instruction profits by a well-organized and definite program or course of study. For the teacher with limited preparation, the course of study serves as a ready reference to source materials, appropriate objectives, and evaluation techniques. The experienced teacher uses the course of study as a guide to progressive accomplishments in health education.

Procedures in preparing the course of study follow those adopted for the entire school or school system. Many communities use bulletins furnished by the state education department as a pattern, with the local course of study adapted from this pattern to suit the needs of the city or town and with the teachers in individual schools per-

mitted to exercise initiative in adjusting materials to the capacities of class groups. In brief, a satisfactory program of study states precise and obtainable objectives, assures the proper selection and organization of content, suggests appropriate methods and teaching experiences, provides sufficient references and teaching materials, and indicates accurate means of evaluation.

All of the above items are closely interrelated. The content must allow for the realization of the objectives. Oftentimes the subject matter suggests the teaching methods most applicable to the particular situation. Obviously the proposed references and teaching materials supplement the methods. And finally, evaluation attempts to measure accomplishment in the objectives sought.

Some courses of study contain separate unit objectives for pupils and teacher. Under these conditions it appears essential to point out that teacher and pupils should become familiar with both lists of objectives. The desired goals of health behavior, as expressed in the teacher objectives, may be accomplished more readily if students understand precisely what the teacher is driving at throughout the study of the unit.

The selection and organization of content naturally follows the needs and capacities of a given group of students. The profusion of normal life experiences with health implications that continuously surround the youth of any age, together with the wealth of scientific information about these experiences contained in textbooks and other written materials, suggest the imperative need for organizing content around a stipulated list of health topics, experiences, or divisions. Such a list provides for the orderly arrangement of subject matter, although its greatest advantage lies in helping to prevent unnecessary overlapping and unsound gaps in selected content. For example, some courses of study now seem to place too much emphasis on nutrition, despite the great significance of this subject in maintaining normal health; at the same time these courses of study often assign mental health and social health to an inferior position. Sometimes textbooks present similar errors of selection and organization.

The use of a stipulated list of health topics or divisions as outlined above does not preclude the organization of courses of study or textbooks around a series of life experiences common to most children. Rather the topics serve as a check list to ensure that the different aspects of health associated with a given experience receive appropriate attention. For example, one instruction unit or experience unit may

borrow heavily from a single topic or division such as temperance, but include items from several other topics, like social hygiene and mental hygiene. By carefully planning these experiences in the course of study, all topics receive the proportionate amount of attention intended for each one of them in view of student needs.

In recent years several individuals or professional groups have proposed lists of health topics, divisions, or experiences for use in preparing textbooks or courses of study. Almost any one of them will suffice in the hands of an experienced person. The check list described below has been employed successfully by some teachers and authors: [10]

1. *Personal regimen.* Food, shelter, clothing, sleep, play, elimination, cleanliness, and similar factors. This area of concentration deals with health matters related to self and for which the person is largely responsible.
2. *Safety.* Personal safety, the protection of others against accidents, and the elements of first aid.
3. *Mental hygiene.* The establishment of emotional stability and control, the causes and outcomes of improper mental health, and the development of personality.
4. *Social hygiene.* Appropriate home and family experiences, proper male and female relationships, and approved sex instruction.
5. *Professional health services.* The work of physicians, nurses, dentists, hospitals, and clinics, and home care of the sick.
6. *Public health.* Health factors and agencies affecting the general public, and the work of public-health organizations.
7. *Temperance.* Moderation and control in all life activities, with special reference to alcohol, tobacco, tea, coffee, narcotics, and other harmful drugs.

Teaching Materials. Even the most experienced instructor needs a variety of materials which properly belong to that wider category of techniques known as teaching methods. The course of study, as an aid, gives direction and substance to the instruction program. Wisely selected textbooks provide accurate information, arouse student interest in scientific health matters, and ensure continuity without unnecessary overlapping or gaps in subject-matter content. Other aids include (1) special reading assignments, (2) audio-visual materials, (3) student committees, (4) observation of school activities, (5) panel discussions, (6) interviews, and (7) excursions.

1. *Special Reading Assignments.* In addition to the prescribed health textbooks, other reading materials contribute to the education of youth.

[10] C. L. Brownell and J. F. Williams, Teachers' Manuals for Health of Our Nation Series. New York: American Book Company, 1947.

Current newspapers, magazines, bulletins, and reports contain stories on up-to-the-moment health problems.

2. *Audio-visual Materials.* The school may purchase or rent motion pictures that depict the latest information on foods and nutrition, public-health procedures, the contributions of science to health, biographical films of health heroes and heroines, and other topics. Under the supervision of the instructor the pupils may prepare or obtain from reliable sources such visual materials as charts, posters, models, slides, graphs, scrapbooks, and murals. Radio programs often contain valuable health materials, and television may soon reveal a most significant means of objectifying health and safety instruction.

3. *Student Committees.* Special committees of students may profitably survey the school-health program or the health facilities of the community (after gaining permission from the proper authorities) and report to the class on conditions found, the class later formulating a series of practical recommendations for improvement. Individual student surveys of their own health problems, followed by plans for correcting apparent inadequacies, serve a useful purpose.

4. *School Observations.* Numerous activities within the school itself relate either directly or indirectly to health and safety instruction. Checking the trays in the cafeteria gives some evidence of how well pupils utilize the instruction on nutrition. Observation of physical-education classes shows the relationship of this program to health and safety. Teachers of industrial arts take special precautions to prevent accidents. Many health activities may be observed in the science laboratories. The department of home economics conducts a program closely associated with the art and science of family living. Within the health-services and rest rooms the student finds a wealth of activities of immediate concern to health instruction. The condition of school lavatories may support good health teaching or set a bad example. The school buses and the students who use them may exemplify intelligent safety precautions or show the need for immediate improvement.

5. *Panel Discussions.* Such discussions often deal with a variety of health problems, although controversial issues seem especially adapted to the panel technique. Outside speakers in addition to participants from the student body and faculty add interest to the panel discussion.

6. *Interviews.* Student interviews of qualified persons who must face health problems often provide timely information for class discussion. These interviews may be conducted at school or at the place where the expert normally works. Specific questions prepared in advance and directed to the person being interviewed yield the best results.

The following questions illustrate the interview technique: How does the police commissioner organize his force to protect the community against the illicit sale of alcoholic beverages and narcotics? How does the health department ensure the sale of safe milk to the community? How do firemen rescue persons from a burning building? What are the responsibilities of a family physician? What kinds of professional work are open to the registered nurse, and what does she do in each one of them? How does the athletic coach train the members of his team? How does the dentist overcome the fears that some children have when they visit his office? How does the judge handle cases of juvenile delinquency? What does the insurance salesman tell his prospective clients about the health values of certain policies? Does the laborer believe that his company property protects the health of employees? What changes would be needed to enable the school cafeteria director to improve her service? What responsibilities has the custodian in the school-health program?

Besides the immediate benefits derived by the pupils, the person interviewed usually takes a greater interest in the school-health program after being questioned by members of the class.

7. *Excursions.* Visits to establishments performing work have gained favor with both teachers and students in recent years. These excursions, if properly planned and conducted, serve the combined function of educating pupils in what the community is doing that coincides with the work of the school and of educating the persons visited in the work of the school as a community enterprise. The following types of excursions are illustrative: (*a*) to a dairy farm or milk-producing plant to find out about pasteurization; (*b*) to a hospital to learn about the care given the sick; (*c*) to the welfare department for information about charity; (*d*) to a tuberculosis clinic to observe the techniques of examination and sanitarium commitments; (*e*) to the sewage-disposal plant to learn about sanitation; (*f*) to the health department for a demonstration of its various activities; and (*g*) to a factory to observe the health services rendered.

After the excursion the class reviews the things learned and classifies the educational significance of each item.

8. *Criteria for the Selection of Teaching Materials.* The kinds of teaching materials used depend upon the nature of the experience being studied. Oftentimes a committee of qualified experts evaluates the supplementary teaching materials in much the same way that committees prepare the course of study or select textbooks.

A committee to evaluate teaching materials may employ a rating

sheet or score card in answer to a question such as does the material facilitate learning, appear to be scientifically sound, make allowances for individual needs and differences, come within the range of pupil comprehension, and really contribute to the progressive education of the group, or is it designed merely to entertain or amuse? Many teaching materials are of inestimable value while others contribute almost nothing. Under unfavorable circumstances a teaching aid may actually do more harm than good. Experience and sound common sense will help to determine the ones to use and the ones to avoid.

The Physician, Dentist, and Nurse as Health Teachers. Many school administrators cast longing eyes at the physician, dentist, or nurse as health teachers or supervisors. The process of deductive reasoning leads the superintendent or principal to arrive at the above conclusion. Surely physicians and nurses know more about the human body than most teachers prepared in colleges and universities. Further, parents and students have confidence in and respect for the judgment of these health experts and will accept their advice more readily than the counsel of teachers.

Physicians, dentists, and nurses may become valuable health teachers and even supervisors if they devote the necessary time and energy to educational preparation. The successful teacher gives years of study to the principles and methodology of education before he acquires the competence necessary to accept a position in a public school; many states base certification on a minimum of four years of professional preparation, and local boards of education oftentimes insist upon an additional year or two of practical teaching experience. To be sure a part of the time spent in medical, dental, and nursing schools should count as professional education, and graduates of these institutions might obtain teaching certificates with not more than a year of additional study in an approved college of education. Few physicians and dentists, however, would accept this requirement, largely because private practice brings greater remunerative returns than teaching.

Perhaps the basic problem lies in the nature of the preparation which these experts pursue. Their preparation deals almost entirely with pathology—with the sick and afflicted—not with habits, attitudes, and skills for optimum growth and development among normal youth. Most doctors and dentists don't want to become teachers in schools. To them the professional satisfactions resulting from private practice or public health far surpass the anticipated joys of the classroom. They welcome the opportunity to give special lectures or demonstrations to

classes on technical subjects, and in this role their contribution to health instruction remains unique.

The registered nurse, with appropriate preparation, usually develops into an excellent health teacher. So valuable have her services become as a teacher that several schools of nursing join with colleges of education in preparing the nurse for the dual role of nurse-teacher. Upon satisfactory completion of the combined course she is qualified to practice nursing or to teach health. Registered nurses without this combined course may obtain a teaching certificate by additional study for approximately one or two years in an approved college of education.

The teacher-nurse has the confidence and respect of parents and children as a result of her hospital training and deserves acceptance as a teacher because of her understanding of educational principles and methodology. Health education needs more young women with this background of training and preparation.

Summary

Instead of representing a relatively new subject, health instruction lays claim to an ancestry that dates back to the earliest days of public education. Throughout the intervening years the family name of this subject has changed at intervals to befit the diversified streams of pedagogical thought that have colored its lineal heritage. The earliest title, physiology, dealt with such academic topics as tracing the circulation of the blood and naming the various bones of the body. Around the turn of the present century physiology became hygiene, but instruction followed the precepts of education generally by emphasizing knowledge about disease and sanitary measures. Health instruction came into common use around 1920, with the most recent change favoring the term of health and safety instruction.

Modern health and safety instruction utilizes the life experiences of youth and adults, guiding these experiences toward intelligent self-direction and community group action for improved personal and social welfare. This program rightfully takes cognizance of inherited capacities and factors in the environment, as it integrates school experiences with actual living in the home and community. Within the school itself health and safety instruction combines the educational features of health services and healthful school living, and includes many other activities. In fact, health and safety instruction so realistically affects the lives of both children and adults that, if given the opportunity, this program could become the hub around which the educational wheel revolves.

Health and safety instruction relates to both direct and incidental teaching. Direct teaching normally means a scheduled time for classes, a planned organization of subject-matter experiences, a progressively arranged body of content, and appropriate ways of evaluating results in terms of the objectives sought. Incidental teaching means focusing attention on health and safety problems whenever they arise in the course of school events—largely a matter of unplanned experiences.

In the lower grades health-instruction experiences center primarily around the child himself and his associations at home or at school. The intermediate grades emphasize the approaches employed for younger children, indicate the reasons why persons should act in a prescribed manner, and show how intelligent persons meet new and changing conditions according to approved standards of conduct. Children in the upper grades require a progressive program of health and safety instruction, with materials and experiences adapted to their levels of interest and comprehension.

The program in the junior and senior high school deals with the present and anticipated needs of young men and women. The average adolescent feels insecure, even though the defense mechanism of bravado makes him appear just the opposite. He needs wise and sympathetic guidance to help him attain his primary goals—to become an efficient and attractive adult. In broad terms, the program of health and safety instruction for secondary schools includes personal and community hygiene, preparation for marriage and parenthood, knowledge of hereditary and environmental factors affecting health, and welfare associated with work and leisure.

The college student, because of a year or two of additional age together with a change of environment, may go more deeply into the scientific facts supporting a given point of view, and will appreciate more thoroughly his responsibilities as a person and as a citizen. He wants to know more about mental and social hygiene, the factors associated with family life, the techniques of selecting a medical and dental adviser, the essentials of public health in matters of disease control and sanitation, and the health and safety elements of various life occupations or leisure.

All health and safety instruction relates to habits, attitudes, skills, and knowledge. A habit may be defined as a custom, a practice, or an inclination acquired by repetition and marked by a facility of performance or decreased power of resistance. An attitude represents a point of view or position taken, indicating action. A skill is characterized by expertness in execution or performance. Skills are seldom mentioned

in referring to health, although they are especially important in the formation of habits and attitudes. Accurate knowledge serves as the foundation for the development of worthy habits, attitudes, and skills. Even with young children the simplification of facts, without distorting them, usually yields excellent results in providing a basis for desirable health behavior.

The average physician or dentist makes his greatest contribution to health and safety instruction by giving special lectures and demonstrations to classes on technical subjects and in giving advice to pupils and teachers on problems of program adjustment to meet individual needs. The registered nurse, with appropriate additional preparation, usually becomes an excellent health teacher or supervisor.

The unique interrelationships between health education and physical education are discussed in the chapter that follows.

Questions and Problems for Discussion

1. Discuss the various forces and factors of the times that gave rise to (*a*) the inclusion of physiology as an academic subject, (*b*) the change to hygiene, (*c*) the development of health instruction, and (*d*) the present program of health and safety instruction. What changes do you anticipate within the present generation? What factors will favor these changes? Oppose them?

2. List the advantages and disadvantages of both direct and incidental teaching. To emphasize your point of view, use illustrations on each of the following levels: (*a*) elementary schools, (*b*) secondary schools, (*c*) colleges, and (*d*) adult education.

3. If you were responsible for organizing a course of study for the types of schools listed in Question 2, name three mutually exclusive objectives or approaches you would use in each of them.

4. Define habits, attitudes, skills, and knowledge. By illustration, show how one depends upon the others in sound education. Does the relative emphasis on these items change with the types of schools listed in Question 2? Explain your answer.

5. Turn to the section on Don'ts in Health and Safety Instruction on page 256. Can you illustrate each of these mistakes from your own observations or from errors that an untrained teacher might easily make? What should be done?

6. In the preparation of courses of study in health and safety instruction, list *five* items common to all current practice in curriculum building and *three* items that apply more to health and safety instruction than to most other programs. As schools move in the direction of the functional curriculum, will these differences (*a*) become less conspicuous, (*b*) become more numerous, or (*c*) remain about the same?

7. Review the section in this chapter on Teaching Materials. What others can you suggest? Give an illustration of the *best* use that could be made of each one of them and explain your point of view.

8. Prepare a check list or score card of criteria for the selection of teaching materials and, on the basis of 100 points, assign a relative value to each criterion.

9. What are the advantages and disadvantages of employing practicing physicians, dentists, or nurses as health teachers? Health supervisors? In the years ahead do you believe that more of these experts will enter the field of health teaching or supervision? Give reasons for your answer, based on current trends.

10. Make a list of the *five* best things that, in your opinion, characterize present-day health and safety instruction at any school level. Then make a list of the *five* items most in need of improvement. From a comparison of the two lists, how would you grade health and safety instruction today in relation to other programs currently operating on the chosen school level? Suggest practical ways by which each of the items in the second list could be improved.

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CHAPTER 10

RELATIONSHIPS BETWEEN HEALTH EDUCATION AND PHYSICAL EDUCATION

The Problem Examined. Few professional issues cause wider controversy than the relationships, or absence of relationships, between health education and physical education. Within the ranks of the profession itself this problem, besides resulting in more spirited arguments than enlightening ones, often prevents physical educators and health educators from presenting a united front to school administrators and to other teachers. Among lay personnel the controversy ranges all the way from the acceptance of health education and physical education as synonymous terms on the basis of avowed purposes to the belief that one program bears about the same relationship to the other that a barber college does to the cloistered halls of an ivy-grown institution of higher learning.

What are some of the basic points of view? Some professional persons contend that health education and physical education pursue identical objectives, and that the use of one term or the other represents merely a matter of convenience or expediency. Another group supports the major premise that the incidental bearing of health education on physical education indicates the need for two programs, each complementing and supplementing the various activities of the other and of the school and college as a whole. A third group subscribes to the point of view expressed by a dean who exclaimed, "When the students of this college enroll for physical education, I assume that they do so because of the health values contained therein, so I am in favor of calling the whole program health education." One member of the staff quickly replied, "Your remarks imply that health education means more than physical strength and vigor and includes the emotional and social development of the individual student. Since this is precisely what physical education stands for in our department, I believe we should preserve the term of physical education which we've used these many years to describe the total program and thus avoid the confusion of needless change." The four prevailing points of view may

be summarized as follows: (1) the identical purposes of health education and physical education suggest the use of either term, whichever one appears more appropriate; (2) the need for two departments, because of the incidental relationships between health education and physical education; (3) all of the avowed purposes of physical education relate to the broader program of health education; and (4) physical education actually encompasses all of the essential elements of health education.

What gives rise to this confusion? Doubtless no single answer will suffice. Rather the peculiar association of several events, occurring at different times and in different places, is responsible for the present state of disorder. Early programs of physical training embodied the achievement of health objectives through exercise and transformation of the title to physical education brought with it the tradition of the past. Many of the early leaders in physical training or physical education had earned medical degrees, which stamped them as authorities when health education gained prominence in the schools and colleges. Throughout the years hygiene courses in colleges and health classes in public schools have been taught by persons on the physical-education staff. About the time medical inspections, temperance instruction, and lessons in hygiene were brought together into a coordinate program of health education, school and college administration favored larger administrative units and the natural association of health with physical education led to the establishment of departments known as health and physical education. Shortly after the First World War several departments of physical education were changed to health education, even though the programs remained essentially the same. Increased attention to health education during the decade of 1920 to 1930 brought with it a number of specialists with limited interest in physical education, many of whom believed sincerely in the desirability of separating the two programs.

Emphasis on physical training by the military services during the recent war years and condemnation of school and college programs of physical education allegedly responsible for the high degree of unfitness found among youth caused a number of physical educators to rededicate themselves to the objectives of strength and vigor that characterized the older programs of physical training. Many health educators, observing this seemingly backward trend in physical education and noting the rebuke leveled at physical education, now renew their efforts to cast off the yoke of physical education and to establish

a separate program of their own. Many other reasons might help to explain the present state of affairs.

In this situation, almost identical programs in different communities lay claim to such a variety of titles as (1) health education and physical education (as separate entities), (2) health education and physical education (as a combined program), (3) health education, (4) physical education, (5) health and physical education, (6) physical and health education, (7) physical welfare, or (8) one of the above terms combined with atletics, recreation, and safety.

Recognition of Relationships. During the period when the rank and file of health educators came from the profession of physical education, a strong conviction prevailed among many of them that health education contributed to physical education, that somehow the program of games and sports and rhythmic events represented the basic core around which revolved the subordinate activities of health examinations, health instruction, and others. Within recent years the increasing number of professional health educators recruited from groups with no particular interest in physical education has moved toward an entirely different set of principles concerning the relationships between the two fields. Some health educators contend that physical education belongs within the major objectives of health education. Others favor the point of view that physical education has no greater association with health education than the latter has with the biological and social sciences, the department of home economics, or even the services of custodial care and attendance.

Faced with these honest differences of opinion, the average school administrator scarcely knows how to organize the program of health education to meet the best educational needs of youth. Administration merely serves the useful purpose of providing funds, leadership, and equipment to facilitate the operation of a given program. In recent years educational administration has moved in the direction of larger units, sometimes comprising two or more programs of similar or related function. This trend accounts in part for the customary organization of health education and physical education into a department of health and physical education. In this setting, the words "health" and "physical" are used as descriptive and equally prominent adjectives modifying the term "education."

The discussion that follows attempts to show the numerous and significant relationships existing between health education and physical education. It attempts further to indicate some of the more prominent

aspects of physical education for persons whose primary interests relate to health education but who work in a department where the programs are combined for administrative expediency.

In the final analysis the contributions of physical education to health education probably are no less real and important than the contributions of health education to physical education. Neither can attain the greatest good for the greatest number of pupils without the other. The well-organized school or college needs both of these programs, administered either as a combined department or as two separate but closely articulated departments.

Avowed Purposes of Physical Education. Over the years physical educators have set forth aims and objectives showing the contributions of this program to the essentials of the good life. At times the objectives follow the general pattern of education as a whole; at other times the avowed purposes of physical education seem to relate in only limited fashion to the prevailing concepts of education.[1] At times physical education appears as a great educational force, providing opportunities for the wholesome satisfaction of inherent drives and urges of individuals and groups. At other times physical education is relegated to the inferior position of a mere service to the more serious academic education in schools and colleges.

Williams ably represents one of the strongest exponents of the doctrine that physical education should contribute to the avowed purposes of general education. His aim admirably expresses this point of view: [2]

> Physical education should aim to provide skilled leadership and adequate facilities which will afford an opportunity for the individual or group to act in situations which are physically wholesome, mentally stimulating and satisfying, and socially sound.

Williams proceeds to explain that objectives arise in the pursuance of an aim and in accordance with the specific activity employed.[3] Thus, "physically wholesome" relates to a sanitary environment (fresh air, avoidance of dust, cleanliness), and to the desirable physiological results of appropriate exercise; "mentally stimulating and satisfying" refers to emotional control and stimulation in the exemplification of

[1] The emphasis in many institutions on interscholastic or intercollegiate athletics as physical-education activities illustrates this point.

[2] Jesse Feiring Williams, "Principles of Physical Education," 5th ed., p. 242. Philadelphia: W. B. Saunders Company, 1948.

[3] *Ibid.*, Chaps. IX and X.

fundamental racial impulses (chasing and fleeing games, rhythmic activities, and self-testing events of various sorts); and "socially sound" means adequate provision for the development of approved contemporary social and moral qualities (loyalty, fair dealing, self-discipline, courage, generosity, and others). Both the aim as stated and the objectives as implied contain many of the identical elements sought in health education and in the complete education of youth and adults.

Keene moves directly to the point: [4]

> Physical education has three fundamental purposes: First, to ensure the wholesome development of the vital organs. Aside from the potentials (heredity) within these organs, they are the only real sources of vitality, and vigorous motor activity is the only known means of developing them; second, to teach fundamental skills so that participation becomes a pleasure rather than an embarrassment; and third, to keep up an interest in many forms of physical activity.

These purposes show certain interrelationships between health education and physical education.

Oberteuffer presents a sound and basic platform for the purposes and function of physical education.[5] His ideas reflect the Dewey philosophy that the survival of any program of democratic education must grow out of the lives of people at a given time and place:

1. That American physical education must be in the image of the American Democracy, must be rooted in the culture of American people, and must have no values different from those conducive to life in the republic. . . .
2. That the practice of physical education must forever acknowledge the known and proved facts about the human organism. . . .
3. That in all of physical education there is but one set of purposes, one standard of values, and one criterion for measuring the worth of practice—the good of the individual. . . .
4. That physical education contains within it a great potential for living, for the cultivation of reflective thinking, and for the intellectualization of our choices. . . .
5. That the teaching of values on the ethical-moral plane must assuredly be as definite and planned for as those of skill. . . .
6. That physical education is as much a social science as a biological one because its outcomes are measurable in terms of group behaviors as well as organic enrichment. . . .

[4] C. H. Keene, Editorial, *The Journal of School Health*, Vol. XV, pp. 172-173, September, 1945.

[5] Delbert Oberteuffer, "A Decalogue of Principles," *The Journal of Health and Physical Education*, Vol. 18, pp. 4-5, January, 1947.

7. That the activities and methods producing an objective extroverted flow of consciousness are more to be desired than those which turn the individual upon himself towards an introverted development. . . .
8. That physical education, far from being an isolated and quite foreign element within the curriculum of American education, contains within it elements quite identical with the expressive arts. . . .
9. That physical education stands upon its own feet as a profession, solidly within the scientific and social culture of the race, beholden to no other group, but ready to work cooperatively with other professions for human betterment. . . .
10. That the high quality of leadership is the primary desideratum of this as of other professions, and that the American university must keep its standards high and its efforts unremitting for the selection and preparation of intelligent, well equipped, and cultured women and men teachers of physical education. . . .

It seems clear that the qualified teacher of physical education determines the aim and objectives to be sought, selects the activities that provide opportunities for the realization of the objectives—moving toward the accomplishment of the aim, and evaluates the outcomes in terms of the objectives, using the best techniques available.

In formulating the objectives the teacher gives attention to the hygienic or health implications of the activity, skills and strategy of the activity, behavior control and development in the learning situation, satisfactions inherent in activity participation, and relationships of the activity to other school and community experiences.

All subjects or programs in the school or college should contribute to the avowed purposes of the institution as a whole, which in turn must follow a general pattern of prescribed function acceptable to that group of persons which supports the venture. Thus the physical-education program in a school that focuses attention principally on the accumulation of subject matter differs considerably from the program established for a child-centered school or a social-centered school. In like manner one might expect to find a different program of physical education at the University of Chicago, where the president explains that attention to the moral, social, and physical welfare of students detracts from the main purpose of the university, which is the advancement of knowledge, and the program at Brooklyn College, where the president holds to the belief that education must extend beyond the immediate boundaries of intellectual accomplishment and that physical education contains numerous and important opportunities for the enrichment of general education.

Dix presents a strong case for health and physical education in a social-centered school: [6]

> It is a very perverted educational attitude to assume that children and young people in the growing stages need carefully planned arrangements for mathematics and for history more than they do for a consistent opportunity and stimulation for physical activity. We have a hangover of medieval contempt for the body, which is far less respectable in the modern age than was the pagan attitude of the Greeks. It is bad enough to have an increasing tendency for life occupations in a mature, complex society to become sedentary and physically malforming, without forcing young people in their growing period to cripple the magnificent heritage that the healthy human physical organism still is. Apparently only in time of war are we shocked to find widespread physical defects and a general lack of vital tone in the population. It is hard to find language strong enough to criticize so vicious a neglect.

The fact remains, however, that all acceptable lists of general objectives of education for nearly a century have given prominence to the contributions of health and physical education, either as stated or implied. The degree to which administrators and specialists in the field have conformed to these specifications stands either as a monument to intelligent planning, when appropriate emphasis has been given to the program, or as an illustration of gross neglect, when the potential values of health and physical education have been ignored. It is well to remember that the purposes of education or of any other social agency do not emerge like the invention of a mechanical instrument or the discovery of a new process. They arise out of the intelligence and experiences of people and aim to improve the lives of children and adults.

About 1860 Spencer attempted to popularize the classification of human activities into educational objectives.[7] His list includes many responsibilities for health and physical education such as self-preservation, securing the necessities of life, rearing and disciplining of offspring, maintenance of proper social and political relations, and activities for the leisure part of life.

In 1918 the Commission on Reorganization of Secondary Education established seven cardinal principles which clearly demonstrate the implied role of health and physical education.[8] These dealt with health,

[6] L. H. Dix, "A Charter for Progressive Education," pp. 87-88. New York: Bureau of Publications, Teachers College, Columbia University, 1939.

[7] Herbert Spencer, "Education," p. 32. New York: D. Appleton and Company, Inc., 1861.

[8] Commission on Reorganization of Secondary Education, National Education

command of the fundamental processes, worthy home membership, vocation, civic education, worthy use of leisure, and ethical character.

In 1924 Chapman and Counts proposed a series of desirable educational outcomes, many of which relate to the contributions of health and physical education.[9] These were that educated individuals should be able to care for their bodies, rear their children, secure the economic necessities, organize for civic action, engage in recreation, and satisfy their religious craving.

In the same year Bobbitt proposed an analysis of human activities for curriculum building and further analyzed each of the main headings into a large number of specific objectives.[10] Many of Bobbitt's general classifications suggest the place of health and physical education: (1) language (social communication), (2) health, (3) citizenship, (4) general social activities, (5) spare-time activities, (6) mental fitness, (7) religion, (8) parenthood, (9) unspecialized or nonvocational practical activities, and (10) vocational activities.

The Educational Policies Commission in 1938 narrowed the classification of objectives to (1) the objectives of self-realization, (2) the objectives of human relationships, (3) the objectives of economic efficiency, and (4) the objectives of civic responsibility.[11] From the bare statement of these objectives the casual reader might assume that members of the Commission failed to recognize the unique contributions of health and physical education. Careful reading of the document, however, shows by both statement and implication the prominent place accorded activities in this field. Because of the general acceptance of this report by educators and its use in the preparation of courses of study designed to serve functional areas, the following paragraphs depict some of the contributions of health and physical education to each of these important objectives.

Objectives of Self-realization. The realization of self develops best in situations involving the interaction of self in relation to the social group in which the individual moves. The educated person understands the basic facts concerning health and disease. He secures for himself and

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Association, "Cardinal Principles of Secondary Education," pp. 10-11. Washington: Department of the Interior, Bureau of Publications, 1918.

[9] J. C. Chapman and G. S. Counts, "Principles of Education," p. 5. Boston: Houghton Mifflin Company, 1924.

[10] Franklin Bobbitt, "How to Make a Curriculum," pp. 8-9. Boston: Houghton Mifflin Company, 1924.

[11] Educational Policies Commission, National Education Association and American Association of School Administrators, "The Purposes of Education in American Democracy," p. 47. Washington: National Education Association, 1938.

his family competent medical and dental advice and treatment. He strives to improve the health of the community. He wisely plans for hours of wholesome recreation and acquires skill in the leisure pursuits of his choice. He realizes the importance of community recreation and appreciates the significance of two general types: (1) direct participation, and (2) the role of the spectator. He subscribes in full to the general principle that the person who lives most, serves best.

Objectives of Human Relationships. From the simple environment of the home the child is advanced into the highly complex society of the school and community. The educated person knows the value of preventing the spread of communicable diseases. He knows that his own health care affects others. He learns that safety applies to protecting others as well as himself, that adventure is a pronounced urge of youth but that taking the "wise chance" and developing skill in the performance of activities constitutes the proper course to follow. He understands that physical-education participation should strengthen and not destroy the objectives of friendship, loyalty, fair play, tolerance, and others; he regards other pupils in the class as allies rather than as competitors. He gains confidence in his own individual powers of achievement but utilizes these powers in working effectively with others.

Objectives of Economic Efficiency. Everyone must work. From a direct point of view, health and physical education make a limited contribution to this objective except for those who decide to pursue some aspect of health education or physical education as a vocation—medicine, dentistry, nursing, health teachers or coordinators, safety directors, physical educators, dance teachers, athletic coaches, professional athletes, and others. Many persons decide upon a professional career in one of the above areas as a result of their school and college experiences in health and physical education. From an indirect point of view, few would deny the significance of health education and physical education in matters of general occupational efficiency, occupational choice, and occupational adjustment.

Objectives of Civic Responsibility. Education develops within the individual a feeling of obligation to the social group to which he belongs—to the community, state, and nation. Many problems in this sphere involve health education and physical education. Social justice may relate to providing equitable health services or recreational activities for the rank and file of citizens. Social activities may include improvement of the health department, establishing better welfare services, initiating a safety drive, organizing the numerous voluntary health

agencies, promoting the Boy Scouts or Girl Scouts, providing a recreation commission for the community, and others. Social understanding relates to the structure of society and to the role of official, voluntary, and private agencies in solving civic problems. Law observance is the responsibility of all citizens and may be learned in part through abiding by such regulations as apply to health examinations, control of communicable diseases, safety, and the rules of games and sports, which represent "laws" for the conduct of the respective activity.

Physical Education and Physical Training. Thus the purposes of physical education supplement the objectives designed for the complete education of youth and young adults. Its association with health education forms a body of interrelated experiences which should command respect in the determination of any acceptable list of proposed educational outcomes. Its adaptation to meet existing needs reflects the prevailing ideologies of persons who occupy positions of administrative responsibility.

Despite the increasing trend for at least a quarter century to accept physical education as an integral part of education, some persons continue to regard physical education as physical training. The latter term, much narrower in scope than physical education, describes the process of training through exercise to produce a strong, well-formed, and well-muscled body.

Both physical training and physical education relate to health, physical training as a means of insuring a strong and robust body and physical education as a technique of education concerned with physical, social, and emotional development.

Physical education supports all of the objectives accepted as worthy of attention in a well-organized school or college, contributing to these objectives through carefully selected activities or experiences of a physical nature. In this sense physical education embraces the unique opportunities of enriching the lives of students through participation in a wide variety of activities which fulfill the inherent desire to run, throw, jump, climb, and to engage in other fundamental movements. Physical education organizes these basic movements in accordance with the growth and developmental needs of various age groups into patterns of games and sports, rhythmic activities, self-testing activities, and aquatic events. The age-old dictum that nothing succeeds like success prompts the physical educator to emphasize skill as a means of ensuring personal satisfaction and further participation.

Physical education is concerned with strength and endurance (the

principal objectives of physical training). But physical education regards these qualities as a means to an end—the means of obtaining greater satisfaction in a specific activity, and the end which represents the all-round educational development associated with participation in the activity. In short, physical education means education *through* the physical activities that have characterized the immemorial history of mankind.

Physical training, on the other hand, deals with training *of* the physical and relates primarily to acquiring bodily strength and endurance through exercise. The physical fitness emphasized by the armed forces represents a goal for physical training. While everyone needs enough strength and vigor to perform the daily activities required of him without undue fatigue and a certain amount of physical fitness doubtless contributes to good health, the precise standards of fitness needed for most daily activities and for good health remain in doubt.

Many advocates of physical training emphasize the virtues of strength, vigor, and endurance for their own sake, as ends in themselves rather than as a means to an end. Thus the physical-training teacher resorts to calisthenics, heavy gymnastics, distance running, wind sprints, and the obstacle course to strengthen the various muscles of the body and to build cardiovascular endurance. These persons may revert to the outmoded physical-training program that served as the forerunner of physical education at a time when physical activity was regarded as a *service* to education rather than as a *part* of it because they mistake the true purpose of physical fitness in the armed forces. The military services very definitely used physical training as a means to an end, a means to develop during a brief training period the strength and endurance needed for combat. To substitute physical training for physical education in schools and colleges is to follow the dubious assumption that training for military service and education for democratic living are accomplished by similar procedures.

Rusk adroitly poses the question, "Physical fitness for what?"[12] He points out that physical fitness always has ranked along with happiness, security, and success as one of the objectives of life that most persons desire, but that physical fitness is a vague term lacking in definition and precise standards. The implication that a high correlation exists between superb physical fitness and health, social success, and the ability to work does not find justification in contemporary medical science. We do not know, continues Rusk, how much physical fitness is neces-

[12] H. A. Rusk, "Concrete Standards Lacking for Physically Fit Persons," *The New York Times*, November 2, 1947.

sary for sound health. Probably the well-formed and well-muscled body contributes to social fitness, although many other factors are equally essential. While freedom from certain physical defects certainly increases working efficiency, physical fitness in terms of strength and endurance relates to work only in so far as the individual may need these abilities to perform the specific duties assigned to him.[13]

Physical fitness properly describes the functional ability of a person to perform a given task. The football player needs one kind of fitness, the person who succeeds in the modern dance needs another kind, and the swimmer needs still another. Complete fitness must not ignore the psychological factors associated with motivation as an essential element along with the functional ability of the individual to withstand the strains imposed by the activity. Skillful teachers of football, the modern dance, or aquatics know the amount of physical fitness required for success in these events and recognize the importance of motivation in stimulating the performer to achieve the necessary fitness. With no precise end in view except to gain in muscular strength and cardiovascular endurance, physical-training activities appeal to the average youth as does a bad-tasting medicinal tonic; at that, many students would prefer the tonic to a stiff dose of the obstacle course!

Until a satisfactory yardstick is devised to measure accurately physical fitness in its various ramifications and until science has defined the basic amounts of strength and endurance required for normal living, physical training cannot be accepted as a satisfactory substitute for physical education. In fact, much confusion would be avoided if education dropped the term physical training (and its implications) in schools and colleges, with physical education charged with the responsibility of developing the strength and vigor required for successful participation in the various activities that comprise the program.

Relationships between Physical Education and the Health Services. The following three sections aim to show the specific relationships between physical education and the large divisions of health education—health services, healthful school living, and health and safety instruction. At many points a satisfactory program of health education contributes to the success of physical education, at other points physical education helps to enrich the activities of health education.

Health examinations play an important part in physical education. A thorough health examination by the school or family physician may

[13] *Ibid.*

disclose certain weaknesses which deserve consideration in planning the program of physical activities. After absences due to prolonged illness the student obtains from the physician or his duly appointed representative a statement of good health prior to resuming his place in physical-education classes. The examination of all athletes before seasonal participation represents sound administrative procedure. The presence of a physician at practice periods and during regularly scheduled athletic contests involving bodily contact tends to reduce the seriousness of the effects of accidents. Athletic trainers should perform their functions under the supervision of a qualified physician. The physician represents the final authority concerning the physical ability of a student to engage in regular physical-education classes or to participate in athletic competition.

Assignment of pupils to modified programs of physical education or to corrective classes depends upon the advice of the physician. The activities conducted in these classes and the recommendation as to when the student shall return to regular schoolwork come under the general supervision of health-services personnel.

The mistaken idea prevails among the uninformed that exercise constitutes an important factor in gaining or losing weight. Herein lies a problem deserving the combined resources of physical education and health services. Within certain limits and under appropriate conditions, prescribed exercise may help to control weight, but the nature of the exercise to be used for this purpose should be determined only upon the recommendation of a competent physician. In this sense exercise represents treatment, and the dosage belongs within the province of medical authority. Morally, if not legally, the physical educator who takes the responsibility of advising weight control through the prescription of exercise deserves prosecution for practicing medicine without a license, because great harm may result from such procedures improperly applied.

Since injuries may occur in physical-education classes, a plan needs to be established for reporting accidents without delay to properly constituted health-services authority for appropriate action. The qualified physician or nurse will utilize this situation as a teaching experience in safety or personal health.

During the normal conduct of physical education numerous opportunities arise for teachers to assist with the health services. Careful observation of pupils in classes may help to screen those in need of further examination. Oftentimes students become acutely aware of remediable defects in their desire to engage in physical-education classes

or to participate in athletics and arrange to have the defects corrected.

Largely owing to home influences, some young women believe that they should refrain from all physical activity during menstrual periods. Opinion remains divided on this problem, and the person in charge of health services will recommend a policy for adoption by the board of education or college authorities. An increasing number of physicians state that continuance with the required program of physical education during this period may prove more beneficial than harmful. Excessive menstrual pain should be reported to the school or family physician for appropriate action the same as for any other defect.

Efficient cooperation between the physical-education and health-services staffs will result in the mutual improvement of both programs.

Relationships between Physical Education and Healthful School Living. Many opportunities arise wherein healthful school living may be practiced or reinforced through physical education. The facilities and equipment used in physical education should exemplify the best in a healthful environment. Satisfactory results in regularly scheduled classes depend in no small measure upon the cleanliness and attractiveness of the gymnasium. Clean floors, sanitary mats, and a wholesome atmosphere go a long way in implementing the attainment of desired educational objectives.

The shower and locker rooms deserve special attention since these facilities receive hard usage, and maintaining them in a sanitary and safe condition requires constant supervision. The physical educator and custodian have mutual responsibilities in the management of these facilities. The physical educator supervises students in the locker and shower rooms to ensure proper and safe use of these facilities and reports unsanitary or dangerous conditions to the custodian for correction. The custodian is responsible for cleanliness, avoidance of locker-room odors, availability of soap and warm water, the supply of clean towels and uniforms (if provided by the school), and efficient functioning of showers and lockers. Insufficient time for bathing and dressing and the deplorable conditions existing in many locker and dressing rooms are responsible for many students developing a disrespect and dislike for physical education.

The aesthetic values of clean and attractive uniforms are as significant as the hygienic properties. Ideally the school or college furnishes the uniforms and has them laundered after each use. A special fee may be charged for this service. The practice of bringing uniforms and towels from home and transporting them back and forth never proves

satisfactory. The *esprit de corps* and the feeling of "belonging to the group" engendered by a special and clean uniform for physical education needs further exploitation for reasons of educational merit. Such organizations as the Boy Scouts, Girl Scouts, and most succesful athletic teams have capitalized on this basic principle.

Unfortunately most athletic-training rooms fail to meet the approved standards of healthful school living. Coaches and trainers often regard this room as a sort of sanctuary beyond the pale of custodial or hygienic jurisdiction. The athletic-training room should approximate the health-services room in cleanliness, sanitation, neatness, and attractiveness of surroundings.

The swimming pool needs special attention to protect the health of persons using this facility. An alert board of health will supervise the bacterial content of pool water, although many boards of health neglect their responsibility in this matter unless the school authorities maintain constant vigil. Standard temperatures for the room and water are respectively 75 to 80°F. and 70 to 78°F. The water may be relatively free from harmful bacteria and yet remain discolored or contain other properties that discourage students from using the pool for wholesome exercise and recreation. The walls around the pool must be kept scrupulously clean. Maintenance of a water level to insure proper functioning of scum gutters, appropriate filters in good working condition, and protection against algae—all represent factors of a healthful environment associated with swimming pools.

The increasing prominence of aquatics as a recreational pursuit for persons of all ages indicates the importance of maintaining the swimming pool as a sanitary, safe, and attractive place where youth may acquire the skills and interests necessary to ensure the continuance of this activity during out-of-school periods and throughout life.

The care and protection given to playgrounds and athletic fields illustrate another cooperative venture between physical education and healthful school living. The spacious, well-kept, and convenient playground or athletic field represents an excellent educational laboratory for any school or college. The skills, interests, and attitudes associated with wholesome outdoor play and recreation, developed by the student during his school life, largely determine the degree to which he makes use of such facilities in later years and influence his adult action in urging the extension of recreational facilities as a valuable community resource. Maintaining playgrounds and athletic fields with a smooth and hard surface, giving attention to proper drainage and safety precautions, marking the lines necessary for games and rhythmic events, and

avoiding the accumulation of unsightly litter—all are part of the responsibility that physical education shares with healthful school living.

Relationships between Physical Education and Health and Safety Instruction. The natural relationships between physical education and health and safety instruction stem from the traditional practice of making the physical educator responsible for the hygiene or health teaching given in schools and colleges. Recent trends toward improved preparation of elementary-school teachers to qualify them for health and safety instruction, the employment of special health teachers or coordinators in secondary schools and colleges, and the utilization of health-services personnel for this work at all educational levels does not excuse the physical educator from responsibilities formerly assigned to him.

Modern concepts of health education recognize the value of coordinating all the resources of the school and community to protect and improve the welfare of youth. In this setting physical education has significant and unique opportunities to enrich the program of health and safety instruction.

Using the classification for health and safety instruction proposed earlier, the relationships between physical education and each of these divisions appear substantial and relevant.[14]

Personal Regimen. All health instruction emphasizes cleanliness, especially in the early grades. Students engaging in vigorous physical activity face the inevitable result of soiled bodies from the dirt of the playground or equipment and from the accumulation of perspiration. Removal of this dirt and perspiration necessitates the cleansing bath after exercise (or at least washing the hands and face) which constitutes a part of the regular physical-education period in efficient school organization. Instruction in how to bathe or wash and in the use of soap and water and towels should be given by teachers of physical education. Perhaps no other school activity provides so natural an opportunity for the child to acquire skill in this basic rule of health.

Much of the instruction in health centers around nutrition with attention to sufficient food, a balanced diet, growth, normal weight, and other factors. The child soon learns that nutrition plays an important part in his ability to excel in physical activities which appeal to his fundamental biological urges. The older boy learns the value of training rules, especially those pertaining to food, as a condition of success

[14] A proposed classification of health and safety instruction into divisions appears on p. 259.

in athletic competition. The adolescent girl gives thought to weight as she contemplates appearing in an abbreviated physical-education uniform, modern-dance costume, or swimming suit, or, like her brother, she may wish to excel in certain athletic events and so adhere to an appropriate diet. Most physical educators are highly trained in nutrition as an essential aspect of their professional preparation; they are qualified to give instruction and advice on foods and food values. The natural setting of physical education makes such instruction timely and real to the student.

Rest and sleep belong in any program of health instruction. Physical education is concerned with these items in a very practical way. Aside from heredity and from a biological point of view, normal growth and development of the young child depends largely on vigorous activity. Such exercise produces fatigue and the need for rest. The well-trained physical educator helps his pupils to acquire habits and skills of rest following periods of strenuous activity. Few successful athletes have failed to acquire skill in relaxation, rest, and sleep as a basic adjunct to superior competence in neuromuscular performance.

Oftentimes programs of health instruction emphasize posture. Now posture represents one of those marginal activities traditionally assigned to physical education but in more recent years accepted by several other departments of the school as an objective worthy of consideration. In extreme cases poor posture may be associated with fatigue or even lead to mechanical interference with the proper functioning of the heart and lungs. The aesthetic and social advantages of good posture, however, are clearly appreciated by everyone, even though the physical values may remain obscure. All pupils should acquire skill in maintaining good posture and learn to recognize correct posture in others. Further, they should know that posture is a dynamic quality often affected by such factors as heredity, fatigue, and mental attitude. The attempt to have all students approximate the ramrod stance of a West Point cadet on parade belongs to a former period in history, fortunately long since past. The posture of students is the responsibility of all teachers, although instructors in health and physical education may lead the way.

Safety. Physical education enjoys the questionable distinction of being especially concerned with safety, because more accidents occur in the gymnasium or on the playground than anywhere else in the school. Like the wise person who profits by his mistakes, physical educators know more about safety than most other teachers; courses in safety and first aid are required of professional students in nearly all under-

graduate schools. Again, physical educators have an extensive laboratory in which to teach the rudiments of safety education: (1) prevention of an accident, if possible, by applying the rules of protection—inspection of equipment, teaching skill in the use of equipment, expert supervision during all hazardous events, a qualified lifeguard present whenever the swimming pool is in use, protective wearing apparel, and others; and (2) provisions for accidents that occur—immediate application of first aid, control of infections, and proper disposal of the case in accordance with policies recommended by health-services personnel and approved by the board of education.

Mental Hygiene. The term "mental hygiene" sounds somewhat mysterious and the person without preparation in this field often associates it with pathological manifestations needing the guidance of a psychiatrist. To the initiated mental hygiene means a wholesome outlook on life and the ability to adjust oneself emotionally to the conflicts of everyday affairs. The student in school or college does not acquire good mental hygiene as a blanket quality but as he learns to meet the individual problems that confront him according to standards approved by society for that particular situation. Participation in physical-education activities affords opportunities in abundance for meeting such problems.

Social Hygiene. This area of health instruction, closely associated with mental hygiene, finds numerous practical applications in physical education. In the lower grades children learn to play together in harmony, appreciating the rights of others and abiding by the rules prescribed for the activity. Later on competition in sports provides excellent opportunities for learning to respect the personality of others and to get along with them in life situations fraught with the elements of conflict and strife. The old saying, "if you really want to know a man, engage him in a competitive sport," enjoys widespread acceptance among persons experienced in such activities.

Recreational events in which young men and women participate together have far-reaching values in the development of wholesome habits and attitudes connected with good social hygiene. The various forms of the dance and increasing emphasis on corecreation in physical education further illustrate the contributions of physical activity to social hygiene.

Professional Health Services. As a factor in the classification of students for physical education, the health examination by a competent physician assumes an important role. The formation of restricted,

adapted, or corrective classes depends in large part upon the outcome of this examination.

The desire to engage in normal physical activities encourages many students to have their remediable defects corrected. This factor is especially noted among young men who desire to participate in athletics.

The seasonal health examination of athletes prior to the opening practice dates and the presence of a physician during contests involving bodily contact indicate the relationship of physical education to the professional health services.

Public Health. The sanitation of swimming pools, gymnasiums, playgrounds, locker rooms, shower facilities, and equipment involves problems of public health. Abolition of the common drinking cup for athletes during contests and practice periods follows approved public-health practices. Excusing pupils with colds and other communicable diseases from physical-education classes relates to the protection of others quite as directly as to the protection of personal health.

Temperance. The relationship between temperance and physical education seems eminently clear. From the very beginning, physical educators impress upon children the deleterious effects of coffee, tea, soft drinks, and other beverages of this nature upon successful achievement in games and sports. In later years, similar instruction is directed toward alcoholic beverages, tobacco, and other harmful drugs. The large number of men and women in adult life who abstain from the use of alcohol and tobacco because these substances were forbidden them by coaches during the years of athletic participation gives evidence of the value of motivated learning during the formative periods of childhood and adolescence.

In summary, it may be stated with confidence that the life situations constantly sought in health and safety instruction as a means of objectifying the learning processes appear in abundance through the normal operation of a well-organized program of physical education.

Physical Education in Elementary Schools. Perhaps a brief discussion of physical-education programs in schools and colleges may help to further illustrate the mutual relationships existing between these programs and the corresponding activities of health education. The present section deals with the elementary schools, followed by sections on physical education in secondary schools and colleges.

The physical-education program in elementary schools emphasizes skill and the satisfactions resulting from wholesome and cooperative

participation rather than focusing attention directly on strength and endurance. Coeducational activities abound in the kindergarten and until children reach the fifth or sixth grade. Thereafter many of the activities are arranged for both boys and girls, although separation of the sexes for certain events yields the best results.

The program includes a wealth of games and rhythmic events interspersed with a variety of self-testing activities which involve running, skipping, throwing, climbing, and other fundamental skills. Joyous participation in events which develop the large muscle groups, without pointed attention to the finer neuromuscular skills, best fits the pattern of maturation among children of this age.

Some form of physical education is mandatory in most elementary schools, being imposed either by state legislation or by regulations established by boards of education. The time allotment should approximate a minimum of 30 minutes per day exclusive of recess periods, although few schools approach this standard.

The recognized importance of physical activity for growing children suggests the imperative need for both outdoor and indoor facilities. Playground space of from three to five acres for each elementary school provides opportunities for the variety of activities which comprise the modern program. A well-equipped gymnasium serves as the physical-education laboratory in inclement weather. Some school architects plan the gymnasium by omitting the partition between two classrooms in order to maintain the general contour of beauty in design of the total building structure. This plan seldom proves satisfactory owing to the required height of the gymnasium and to other factors of construction. Besides, the partition is too easily put in place at the first signs of increased enrollment, with the consequent loss of indoor play space.

Adequate equipment includes a variety of balls, bats, rackets, jumping ropes, jump standards, nets, a phonograph with a supply of carefully selected records, a piano, and other paraphernalia needed to conduct the program planned for the individual school.

The classroom teacher usually gives instruction in physical education, although a few schools employ instructors especially prepared in this subject. The classroom teacher may have the assistance of a special supervisor or consultant. A growing trend in elementary education would provide an expert consultant in physical education for each elementary school to assist classroom teachers with their daily programs in this area and to give actual instruction whenever the situation calls for competence beyond the limits normally expected of the regular

teacher.[15] In the upper grades, the best results obtain when the instructor and pupils are of the same sex.

A carefully planned course of study prepared locally by the teachers themselves tends to ensure the necessary articulation between physical education and other experiences which the pupils have at school. State education departments often furnish guides to curriculum building which assist local schools in the preparation of courses of study, although detailed state courses of study per se usually possess limited value. The course of study contains the aims, objectives, activities, hints concerning methodology, selected references, suggested articulations with other school experiences, and proposed techniques for evaluating the results obtained.

Physical Education in Secondary Schools. Physical education in the secondary school follows the pattern prescribed for elementary pupils but with greater emphasis on the finer coordinations of skill, increasing strength and vigor related to specific activities, the development of attitudes and knowledge consistent with adolescent age, and the creation of an interest in continued participation later in life. During the elementary and secondary school period, most students acquire the interests and skills in whatever motor activities they use in recreation as adults. The former Methodist doctrine, which extolled the virtues of work as contrasted to the evils of leisure by the pronouncement, "Those who play when they are young will play when they are old," [16] finds no truer application, in statement, than the principle supported by modern teachers of physical education in secondary schools.

The activities emphasize individual and team games and sports of various sorts, with aquatics becoming increasingly popular both for developmental and recreational reasons. Numerous forms of the dance find an important place in the course of study, especially for young women. Young men, too, are beginning to acquire an interest in rhythmic activities as the coeducational values of physical education become more prominent. The self-testing events of stunts and tumbling appeal to both sexes. Recently camping and outing activities have found their way into the physical-education program of the secondary school as recreational interests and skills assume greater significance. Special activities of a restrictive or adaptive nature constitute the program for

[15] A. I. Donnelly, "The Physical Educator as a Consultant in Elementary Schools" (unpublished doctoral thesis). New York: Teachers College, Columbia University, 1947.

[16] "Discipline of the Methodist Church," 1792.

students unable to participate with profit in the regular activities because of physical deficiency or orthopedic defects.

Most authorities recommend a daily period of physical education in the secondary schools, even though state laws and regulations may have established a minimum of two or three hours per week.

Since physical education represents a required subject in most schools, it should be scheduled first on the student's program along with other required subjects. This procedure allows greater freedom in fulfilling the individual interests and needs of all pupils. Classes with limited enrollment facilitate efficient instruction, so often lacking when large numbers of students are scheduled for physical education upon the basis of "free" periods.

Owing to the departmentalization of instruction in most secondary schools, duly licensed or certified teachers are assigned to physical education. Where measurable outcomes in physical education receive the attention afforded other subjects, the teacher-load approximates the number of hours expected of academic instructors. The qualified person in charge of the gymnasium or playground gives attention to the avoidance of accidents, although disproportionate attention to possible injuries may undesirably restrict the adventurous nature of normal youth at this age.

A wisely planned course of study, prepared locally, provides for specific and progressive goals of achievement in accordance with the capacities of pupils who comprise the group. The course of study supports the avowed purposes of the secondary school as a whole, shows articulation with other programs in the school (especially health), and contains suggestions for measuring stages of progress.

Standard outdoor playgrounds for secondary schools require a plot of smooth land covering an area of from 10 to 20 acres. Indoor facilities include spacious gymnasiums for both boys and girls, together with swimming pools, locker rooms, and shower rooms. Smaller gymnasiums for restrictive or adaptive classes increase the efficiency of the program. The equipment for both indoor and outdoor classes should be adapted to the program needed to fulfill the objectives desired and permit all members of the class to participate at a given time. No program of physical activity can make significant contributions to the education and lives of adolescent youth without adequate facilities and equipment.

Physical Education in Colleges and Universities. The program of physical education outlined in the preceding section will suffice for

colleges and universities. College students need somewhat different activities and different standards of achievement from those used in secondary schools, but the objectives and general pattern remain about the same.

Colleges and universities allow the student greater freedom in the choice of activities, because at this age the skills and interests developed largely determine the recreational pursuits of later life. The truly professional teacher of physical education attempts to guide the college student into types of activities designed to perpetuate the health and happiness obtained from wholesome participation in physical activity during the productive years of adulthood.

Physical Education and Athletics. Athletics normally relate to intramural and interscholastic or intercollegiate competition. This section attempts to describe the educational features of athletics, especially the broad health implications; it also includes a brief description of sports days and sports clubs. While not strictly athletic in nature, sports days and sports clubs often grow out of intramural activities and may properly be associated with the program of physical education and athletics.

Athletics should represent an integral part of education, organized and controlled to serve the purposes of the educational institution. Intramural athletics provide excellent laboratory experiences for the inculcation of skills, knowledge, and social objectives pursued in regular physical-education classes. Intramural participation enables the skilled and unskilled of both sexes to enjoy the social and physical benefits of wholesome recreation. Sports days, originally designed for girls and women, gradually are finding a place in the men's program or as coeducational activities wherein the less skilled have an opportunity to engage in a wide variety of intramural events. In fact sports days often serve as culminating activities to the intramural program. Sports clubs have gained prominence in several colleges as an effective means of providing approved recreation for mixed groups under the general supervision of capable faculty members. Organized on a purely elective basis, sports clubs emphasize social as well as physical and health objectives through such activities as hiking, swimming, skiing, bowling, tennis, riding, and others. Interscholastic or intercollegiate athletics enable youth of high physical competence and specific skills to realize the objectives of physical education on a level of performance suited to the superior abilities and capacities of participants.

Thus athletic or sports participation in general properly grows out

of a rich program of physical education, which, in turn, supports the purposes adopted by the school as a whole.

The fact that athletics, especially interscholastic and intercollegiate sports, so often deviate from the prescribed pattern of education represents a fallacy in organization and conduct which should be investigated and offset by the adoption of sound policies by school and college authorities. Occasionally the fault lies with the school or college administration that regards athletics as something extracurricular, or so laden with political and social pressures that the administration dares not or does not exercise the kind of leadership over athletics essential for their educational success. In other respects the blame belongs to the early physical educators who allowed athletics to develop as a separate enterprise and as extracurricular activities entirely apart from the regular program of physical education.

The history of the athletic movement helps to explain some of the prevailing controversy. Students first organized athletic teams to play with boys and young men from other communities. School authorities searched for appropriate measures to circumvent the unfortunate situations (quarrels, fights, and financial difficulties) which frequently arose as a result of such competition. Many physical educators of that era preferred to have nothing to do with the venture. Athletics soon gained such prominence in the schools and colleges that many administrators, to say nothing of the physical educators, feared the consequences of attempting to exercise appropriate control over these events and to direct them toward educational goals.

Obviously the chief factor responsible for the application of noneducational principles to athletics has been the influence of students, alumni, and out-of-school groups. Athletics appeal to the biological urges of conflict and strife and spectators vicariously experience the thrill of victory and the shock of defeat quite as realistically as the actual participants.

Whatever cause lies behind the unfortunate situation that surrounds athletics in many schools and colleges, the fact remains that appropriate steps are needed to harness this great educational force to serve worthy ends. This means that athletics should not usurp time properly assigned to physical-education classes, dissipate the energy and professional resources of teachers who might render greater service in other school activities, exercise priority over the facilities and equipment needed by the entire student body, nor lay claim to a disproportionate amount of the student's time and interest.

The complete organization and control of athletics by school or college authorities represent sound administrative policy, with students and outside groups given the same voice in these matters that they enjoy in other educational affairs. Effective organization places the athletic coach under the immediate supervision of the school or college administration, with all the rights and responsibilities given to him which other teachers or employees have—including salary, tenure, and retirement provisions.

In recent years the problem of athletics for girls and women has aroused serious controversy. Gradually the pendulum appears to swing in the direction of more competition for women because of the inherent educational values contained therein, assuming that the activities are properly controlled by women coaches and officials and assuming further that activities selected are physiologically suited to the strength and abilities of participants. The Women's Athletic Section of the American Association for Health, Physical Education, and Recreation deserves commendation for its effective work in establishing standards within this area.

Athletics point the way for other school and college programs to follow in protecting the health of participants. Medical examinations for all prospective team members precede the beginning of each practice season. A physician attends all games involving bodily contact and represents the final authority concerning the fitness of an athlete to enter or leave the contest. He also renders first aid in an emergency and recommends the proper care for an injured player. The coach thoroughly understands the game and the hazards involved; he gives expert attention to the physical condition required for successful participation in a given sport and insists upon protective equipment to reduce the frequency of accidents. Limitations imposed upon the number of games and practice periods allowed during the season further help to protect the health of athletes.

The desirable and educational features of athletics far outweigh the physical and social disadvantages. Instead of pointing to overemphasis, subsidization, and commercialization as insurmountable odds, educators might well direct their efforts toward improving conditions wherever such improvement seems necessary. Gullion expresses this point of view as follows: [17]

[17] B. B. Gullion, *Athletic Bulletin for Students and Alumni*, August 25, 1947. St. Louis: Washington University.

The commercialization of intercollegiate athletics has resulted in the loss of many of the educational values which should accrue from such contests. The overmatching of athletic teams, the injustices and inequalities in the subsidization of players, the lowering of academic standards, the subordination of interests of participants in college athletics to the "dollar sign," the abandonment of amateur principles, and the stigma incurred through widespread athletic scandals are examples of the athletic and educational decay which have made athletics the chattels of educational institutions and which have deprived participants of enjoyment which they should derive from playing in intercollegiate athletic contests.

Athletic contests constitute a common interest for many students, faculty members, and alumni. Sound athletic contests provide a physical and emotional outlet for participants and spectators. The interests of both participants and spectators can be satisfied within the boundaries of an educational pattern of athletics and physical education which afford the opportunity to realize the true aims and objectives of this phase of the educative process.

Many educational institutions have avoided the trend toward subsidized athletics and have maintained the interest of students and alumni. Other institutions have experimented with the "pressure program" for a few years and then returned to the amateur plan. Many other colleges and universities would like to break the heavy shackles of political pressure and indebtedness and return to a program based on amateur standards.

Amateur athletics will provide the caliber of competition which is interesting to both participants and spectators. The enjoyment of the game rests mainly in the evenness of the score and in the finesse of the players. The achievement of the first factor rests in the process of scheduling teams with similar educational and athletic goals. The solution of the latter revolves around a technically sound coaching staff.

Athletics and physical education should be conducted primarily for the participants. The interests of the participants, other students, faculty, alumni, and others should be considered in that order. The total program should be broad enough to meet the needs and interests of the entire student body in so far as possible. This would embrace broad programs of intercollegiate athletics, intramural athletics, and physical education. The instruction in each phase of the program should approximate the standards of excellence sought in any other department of the university.

Physical Education and Recreation. Until comparatively recent years society viewed recreation as an enterprise of temporary nature used to fill in the gap between periods of work, study, or worship. The fundamental belief, however, that man must have leisure pursuits finds justification in the chronicles of history which describe the ancient courts of kings, festivals associated with the church, the husking bees

and barn-raisings of previous generations, school playgrounds constructed more than a century ago, and scores of similar examples leading up to the present decade.[18]

The increased amount of leisure and improved standards of living enjoyed by each generation in this country bring with them the realization that society must elevate recreation above the level of mere amusement and must regard education for leisure as a vital factor in improving the health and happiness of mankind. Most educational leaders contend that acquiring skill and interest in wholesome recreation represents a societal need comparable to learning the skills of a vocation, mastering the essentials of worthy home membership, securing adequate food and reasonable shelter, and maintaining sound health.[19]

Physical education and health education make significant contributions to education for leisure. The games, sports, and rhythmic activities of physical education form the core of most recreational programs for youth and young adults. Many students in schools and colleges develop enduring skills and interests in neuromuscular pursuits for leisure use in properly organized physical-education classes. Other skills and interests include music, arts and crafts, literature, and similar activities. Health education contributes to the satisfactions derived from recreation by assisting with the correction of remediable and restricting defects, teaching the essentials of healthful and abundant living, and emphasizing the safety precautions necessary for successful participation.

In turn recreation contributes to physical education and health education. Recreation serves as an excellent laboratory to bring out the full realization of certain objectives pursued in physical education. The importance of wholesome leisure-time activities as a means of objectifying social health, mental hygiene, and physical development constitutes a basic principle in all programs of health education. Absorbing interests in recreational pursuits help to mold group patterns of behavior, favorably influence personality development, and provide unexcelled opportunities for emotional release and the removal of nervous tension.

Summary

Controversy exists over the relationships, or absence of relationships, between health education and physical education. In general, the four

[18] J. F. Williams and C. L. Brownell, "Administration of Health and Physical Education," 3d ed., p. 326. Philadelphia: W. B. Saunders Company, 1946.

[19] *Ibid.*

points of view are (1) the identical purposes of health education and physical education suggest the use of either term, whichever one appears more appropriate; (2) the need for two departments, because of the incidental relationships existing between health education and physical education; (3) all the avowed purposes of physical education relate to the broader program of health education; and (4) physical education actually encompasses all of the essential elements of health education.

The primary function of this chapter is to (1) show the numerous and significant relationships existing between health education and physical education, and (2) indicate some of the more prominent aspects of physical education for persons whose primary interests relate to health education but who work in a department where the programs are combined for administrative expediency.

In the final analysis the contributions of physical education to health education probably are no less real and important than the contributions of health education to physical education. Neither can attain the greatest good for the greatest number of students without the other. The well-organized school or college needs both of these programs, administered either as a combined department or as two separate but closely articulated departments.

All acceptable lists of general objectives of education for nearly a century give prominence to the contributions of health and physical education, either as stated or implied. The degree to which administrators and specialists in the field conform to these specifications stands either as a monument to intelligent planning, when appropriate emphasis is given to the program, or as an illustration of gross neglect, when the potential values of health and physical education are ignored.

The important difference between physical education and physical training relates to purpose. Physical education means education *through* the physical activities that have characterized the immemorial history of mankind. Physical training deals with the training *of* the physical by developing muscular strength and cardiovascular endurance through exercise. At least until a satisfactory yardstick is devised to measure accurately physical fitness in its various ramifications and until science has determined the basic amounts of strength and endurance required for normal living, physical training cannot be accepted as a satisfactory substitute for physical education. In fact, much of the confusion would be avoided if education dropped the term physical training, with physical education assuming the responsibility for developing the nec-

essary strength and vigor required for successful participation in the various activities that comprise the program.

Physical education and the health services work together in many ways. Physicians examine students for physical-education classes, and suggest modifications in program when necessary. A physician examines athletes prior to the beginning of seasonal practice periods, attends practices where the activity involves bodily contact, attends games of similar nature, and represents the final authority concerning the physical ability of an athlete to enter or continue with the game. Careful observation of pupils by the physical educator may help to screen those in need of further examination. Oftentimes students become acutely aware of remediable defects in their desire to engage in physical education and arrange to have their defects corrected.

Numerous opportunities arise wherein healthful school living may be practiced or reinforced through physical education. These opportunities relate to (1) cleanliness and sanitation of gymnasiums, playgrounds, locker rooms, shower rooms, and swimming pools; (2) bathing or washing after exercise; and (3) stimulating friendly and cordial relationships between students and employed personnel.

Physical education provides a natural situation for the inculcation of most habits, attitudes, and skills sought in the program of health and safety instruction. All well-trained teachers of physical education understand the principles of health teaching and apply their efforts to supplement those of special health instructors.

The physical-education program in elementary schools emphasizes skill and the satisfactions resulting from wholesome and cooperative participation. The program includes a wealth of games and rhythmic events interspersed with a variety of self-testing activities which involve running, skipping, throwing, climbing, and other fundamental skills.

Physical education in secondary schools follows the pattern prescribed for elementary pupils but with greater emphasis on the finer coordinations of skill, increasing strength and vigor related to specific events, the development of attitudes and knowledge consistent with adolescent age, and the creation of interests in continued physical participation later in life. The activities emphasize individual and team games and sports, aquatics, dance forms, self-testing events, and camping and outing activities. Coeducational activities increase in popularity. Special activities of a restrictive or adaptive nature constitute the program for students unable to participate in the regular events because of physical deficiency or orthopedic defects.

College and university students need somewhat different activities

and different standards of achievement from those used in secondary schools, but the objectives and general pattern remain about the same. In colleges and universities the student is allowed greater freedom in the choice of activities, because at this age the skills and interests developed largely determine the recreational pursuits of later life.

In properly organized schools and colleges, the total program of physical education includes athletics, sports days, and sports clubs.

Physical education and health education make significant contributions to education for leisure, and recreation in turn furnishes a wholesome laboratory for health and physical education.

Questions and Problems for Discussion

1. Are the needs and interests of youth served better with separate departments of health education and physical education or with a combined department? What basic factors deserve consideration in formulating an opinion about this matter? Sketch briefly the type of organization best suited to obtain satisfactory results in each plan.

2. In a school or college, who is responsible for recognizing the relationships between health education and physical education and for insuring the operation of these relationships? How should the task be accomplished?

3. Formulate a basic principle concerning the relationships between health education and physical education and give examples of its effective application.

4. Define physical education. Propose one or more aims for physical education that illustrate its appropriate direction.

5. Select a list of objectives for general education that appears satisfactory to you and explain the contributions of physical education to each of these general objectives.

6. State your position with respect to the controversy existing between physical education and physical training. What basic principles of education have you applied in formulating your position? What principles of health education?—physical education?

7. In your opinion, does physical education relate most closely to (*a*) the health services, (*b*) healthful school living, or (*c*) health and safety instruction? What changes occur to you that would increase the effectiveness of these relationships?

8. What are the essential differences between physical education in the elementary schools, secondary schools, and colleges? How might these programs be improved?

9. Discuss the programs of interscholastic and intercollegiate athletics with respect to their educational functions. From your discussion, formulate a basic principle that education might follow in the organization and conduct of these activities.

10. In view of everything you know about general education and recreation, state *three* principles that public schools and colleges might profitably adopt with reference to education for leisure. How would the fulfillment of your principles change the current direction of education?

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CHAPTER 11

TECHNIQUES OF EVALUATION

Current Trends in Evaluation. The wheels of progress grind forward in evaluation—from subjective judgment to the use of standardized tests, and from objective techniques directed toward a limited number of items that readily lend themselves to statistical treatment to a careful analysis and appraisal of the entire program using the best means available to obtain the desired results.

The phrase "desired results" presupposes an aim and a series of objectives designed to approximate the aim. Both the aim and objectives coincide with the purposes of the total educational program but indicate the precise contributions expected from a given subject or department of the school or college. Having established a worthy aim and several objectives of practical and obtainable nature, the competent administrator and teacher select techniques of evaluation to measure present status or accomplishment over a given period.

These techniques of evaluation encompass a wide variety of activities. They extend from the administrative policies and procedures adopted for successful organization and conduct of the program to the minutiae of habits, attitudes, skills, and knowledges acquired by the student in the process of his growth and development. They range from the degree to which home and community resources contribute to the successful conduct of health education in schools to the way in which school health affects the lives of persons in the home, community, state, and nation.

Oftentimes the qualitative elements in a stated objective direct attention toward expert subjective judgment or a rating scale as the tool of evaluation. At other times quantitative factors permit the use of standardized tests which tend to rule out the bias or subjectivity of the examiner. Most of the policies adopted by administrative officers and the health attitudes formed by students must be evaluated by subjective methods. Numerous health-knowledge tests and score cards for building appraisal yield a numerical score in relatively accurate terms of amount. Not all judgments are entirely subjective any more than all standardized tests are thoroughly objective. For the most part

the physician's appraisal of the child's health status follows an expert analysis based upon subjective judgment, but the doctor uses standardized instruments and techniques of measurement (the stethoscope and blood count) that give a high degree of objectivity to the procedure. By contrast the reliability of a standardized test for health knowledge or physical fitness may fluctuate considerably, depending upon the amount of motivation instilled in the student by the nature of the test or by the personality of the examiner.

The well-trained teacher or administrator gives careful attention to measurement. He keeps in mind the need for evaluating progress in *all* of the objectives established for a given program and selects the instruments best suited for the task at hand.

The Statistical and Clinical Approaches to Evaluation. Both of these approaches find ready application to the evaluation of health education. The *statistical approach*, based upon the law of averages, serves as the foundation for the preparation of standardized tests which provide a numerical score easily compared with norms devised to illustrate satisfactory achievement at certain levels. The *clinical approach* takes into account the various factors operating to support or restrict the item being evaluated and depends for its validity upon the expertness of the investigator who renders a judgment concerning the degree of successful accomplishment in view of supporting and restricting forces.[1]

Many authorities in tests and measurements favor the statistical approach because of its preciseness and because the numerical scores obtained permit comparison with established norms. Those who look upon education as a science often rely upon this approach. In fact the law of averages finds immediate application in science where various factors or elements react consistently when treated under controlled conditions. The health-knowledge tests, described later, employ the statistical approach.

Those who favor the clinical approach point out the complexity of most single program objectives in health education and view with skepticism the term "normal" when applied to a given administrative procedure or instructional outcome. An apparently simple and direct objective, such as the "determination of health status," involves at least the widely diversified factors of a careful health examination by a com-

[1] Further discussion of these two approaches appears in J. F. Williams and C. L. Brownell, "The Administration of Health and Physical Education," pp. 381-383. Philadelphia: W. B. Saunders Company, 1946.

petent physician and dentist, the health history, hereditary and environmental elements, and probably a conference with the parent of an elementary-school child. No one has successfully developed a standardized test for health status by utilizing only those items which lend themselves to statistical evaluation. In the measurement of health instruction, Rugen and Nyswander appropriately suggest that behavior and attitudes are more important than knowledge.[2] So-called "normal" behavior and attitudes for one child may vary widely from those of another with a different background of heredity and environment. Further, accepted techniques for the preparation of standardized tests thus far exclude many of the intangible though significant elements associated with attitudes and behavior.

The administrator or teacher uses both statistical and clinical measures in health education, selecting the technique best adapted to the objective sought. In either case, he gives due cognizance to the factors of validity, reliability, and objectivity.

Validity, Reliability, and Objectivity. Although these terms properly belong to statistical measurement, where their application for years has guided the efforts of research workers, the same instruments relate to successful clinical evaluation. *Validity* refers to the efficiency with which the technique employed measures what it *attempts* to measure. *Reliability* depends upon the consistency with which the technique measures whatever it *actually does* measure. *Objectivity* eliminates the bias or judgment of the investigator.

Perhaps a few illustrations will help to make clear the proper use of these terms in both statistical and clinical relationships. A valid health-knowledge test measures accurately the various areas of information prescribed by the course of study. The same test becomes increasingly invalid as it tends to include a disproportionate number of items relating to nutrition with the restriction of items on mental hygiene, assuming that both nutrition and mental hygiene receive approximately the same amount of emphasis in the course of study. Likewise some tests of habits and attitudes are invalid when the student responds according to his knowledge of the subject matter rather than by the way in which he normally conducts himself or actually feels about the problem.

A school superintendent in a medium-sized community may reliably

[2] M. E. Rugen and Dorothy Nyswander, "The Measurement of Understanding," *45th Yearbook*, National Society for the Study of Education, Part I, p. 214. Chicago: The University of Chicago Press, 1946.

evaluate the cooperative relationships existing between the boards of education and health if he gives due consideration to all of the factors agreed upon between these two institutions of government. He may unreliably evaluate these relationships if he depends solely upon his cordial associations with the chief health officer at one of the weekly luncheons of the local Rotary Club.

The teacher who thoroughly understands the principles of growth and development, and who really knows the hereditary and environmental endowments of a given pupil, may objectively evaluate some aspects of his health progress by observation and analysis. If personality conflicts between the pupil and teacher interfere with sound judgment, the observation and analysis often become tempered by personal bias.

Validity, reliability, and objectivity apply to all of the techniques of evaluation described in the section that follows.

Types of Evaluation Techniques. Procedures for evaluating the success of health education follow the general pattern prescribed for evaluating other programs. The chief differences lie in the constant application of health to the immediate lives of students in the home and community, and to the various outside agencies concerned with the identical health problems—factors not so readily apparent in most other subjects or programs. These differences suggest frequent use of evaluation techniques to determine the success of the on-going program, to modify certain activities apparently not yielding maximum results, and to utilize the findings of other agencies whose objectives parallel those of the schools.

The following list of evaluation techniques provides a summary of essential elements; further application appears in later sections, which deal with the measurement of the large divisions of health education: [3]

Observation. Doubtless the most widely used and best single evaluation technique, observation belongs in any school-health program. The school superintendent or principal uses observation to note the effectiveness of his administration. The teacher and nurse employ observation to measure progress in health activities for which they are responsible. The physician utilizes critical observation in determining the health status of each pupil. The custodian observes the effectiveness of his handiwork.

Surveys. Continuous surveys yield valuable information relating to program accomplishment and needs. One type of survey compares

[3] See also Rugen and Nyswander, *ibid.*, pp. 219-220.

existing conditions with established standards. Another type of survey evaluates achievement in terms of avowed objectives as determined by a given school. Both types have their place.

Student Self-appraisal. Assuming that students clearly understand the program objectives and know the ways of accomplishing these goals, self-appraisal forms constitute an excellent technique for evaluating results and for stimulating motivation.

Analysis of School Practices. A student's application of health concepts in school largely indicates the degree to which he has made these concepts a part of his daily living. Examples are his selection of food in the school cafeteria, his ability to get along with others, attention given to fatigue and rest in physical-education classes, and to safety in shops and laboratories, use of health illustrations in oral or written English and in the social studies, and so on.

Analysis of Practices outside of School. These practices denote the carry-over value of health. Some examples are the purchase of food at restaurants and other public places, an organized program for work and recreation, attention to home and street safety, or having friends and liking people.

Interviews. Many types of individual and small-group conferences aid in evaluation. An interview with a student often discloses needs and interests worthy of attention. Conferences with parents, welfare workers, other teachers, the principal, or health-services personnel may reveal evidences of problems or deficiency in current practices.

Tests. Oral and pencil-and-paper tests represent customary techniques of evaluation in all school subjects.

Diaries. Health diaries kept by students often indicate practices, likes, and dislikes which the teacher or principal may use to advantage in measuring the success of stated objectives. Encouraging students to include their honest and frank opinions or practices and respecting their judgments without penalty yield the best results.

Health Records. The health histories that serve as adjuncts to the periodic examination contain valuable materials for use in evaluating conditions in the home affecting student welfare. These histories further show how schools may, in part, overcome home deficiencies. Other records include autobiographies, anecdotes, and teacher notations.

Health Examinations. Conducted by physicians and nurses employed by the board of education or board of health, these examinations measure health status and represent one of the most often used means of objectifying the school-health program. The increasing tendency to favor the giving of these examinations by family physicians and dentists

points in the direction of sound educational practice, ensures better cooperation between the home and school, and indicates consequent greater efficiency.

Evaluation of Administrative Policies. Doubtless the most significant aspect of measurement relates to the evaluation of administrative policies. Without the guidance of sound organizational planning, few lasting and fruitful effects may be expected from the health services, healthful school living, or health and safety instruction. While the superintendent or principal usually represents the final authority for administrative policies in public schools, and the president or dean accepts this responsibility in colleges and universities, teachers and other staff officers cannot ignore their obligations to advise the administrators in matters affecting the total welfare of the educational institution. The dichotomy between administration and instruction rapidly evaporates into thin air when both line and staff officers are properly trained for their respective and coordinate tasks.

Successful administration depends upon the establishment of a series of clearly defined and sound policies and the adoption of procedures to fulfill each policy either as contained in the written statement or as implied.[4] The continuous survey helps to evaluate the successful operation of policies and procedures and to indicate the need for change. As an example, the board of education may have a policy to the effect that school physicians may neither diagnose the defects found in children nor render treatment of any kind beyond first aid and care for sudden sickness occurring at school. The procedures to carry out this policy range all the way from instructing persons concerned with the meaning of the edict to encouraging the removal of remediable defects by family physicians and dentists and to enlisting the assistance of local welfare agencies in correcting the defects of indigent cases.

A school or college with clearly defined policies and procedures knows where it wants to go and probably is on its way toward accomplishing worth-while objectives. Such an educational institution has something to measure. But the task of evaluating the administrative policies and procedures of a school or college that has no health program is like trying to steer a ship that isn't moving.

Perhaps the best way to measure administrative policies involves the preparation of a check list covering the various health items that require administrative sanction or action and to answer the questions

[4] Williams and Brownell, *op. cit.*, Chap. I.

contained in the check list by utilizing the most expert judgment obtainable. These judgments should make use of observations, surveys, conferences, and such other means as may validate and objectify the answers given. The following items, selected at random, are suggestive:

1. Does the school-health program clearly distinguish between responsibilities assumed by the educational institution, home, other official agencies, voluntary organizations, and private enterprise?

2. Is the school doing all it can to bring about an effective articulation of functions rendered by the above agencies to ensure the best possible health program for all citizens in the community?

3. Has the school established policies that differentiate between the responsibilities of the educational institution with respect to instruction, services, and treatment, and does the weight of evidence in the community favor these policies?

4. Does the school have effective health-education leadership in terms of qualified personnel for the different major areas?

5. Have effective school-health councils, composed of representative personnel, been established in each building?

6. Does the health-services program yield maximum results in terms of both services and instruction?

7. Are the schools organized and conducted to promote the best tenets of healthful school living for students and employed personnel?

8. Does each school have an effective program of health and safety instruction designed to meet the growth and developmental needs and interests of individuals and groups?

9. Does the school-health program properly articulate the various services and subjects offered, especially guidance, custodial care, school feeding, attendance, physical education, home economics, biological science, social science, and others?

10. Does the school-health program encompass adult education for parents and interested persons in the community?

Many state departments of education have prepared check lists for use by local school systems in evaluating administrative practices. School authorities may avail themselves of these lists, request assistance from the state education department in evaluating health administration, or conduct surveys of their own to increase administrative efficiency.

Evaluation of Health Services. The basis for evaluating the success of the health-services program relates to the responsibility accepted by the educational institution for the organization and conduct of these

activities. The community may have decided, for example, that the board of health shall give the periodic health examinations and conduct the various follow-up services. On the other hand, a board of education might wisely decide that health examinations should be given by family physicians, that a strong educational campaign be organized by the schools to acquaint parents and local physicians with the implications of this decision, that the schools shall encourage pupils in health-instruction classes to go to their famliy physicians for the examination, and that the schools intend to use the results of these examinations for educational purposes.

From the above paragraph it becomes evident that the determination of purpose or desired function represents the basis for evaluating the health services. In the next step, the board of education establishes policies and procedures in accordance with the determined purpose or function. Activities to fit the policies and procedures round out the picture.

With the honest differences of opinion currently existing on the relative merits of numerous health-services activities properly belonging to the board of education, board of health, or to private medical practice, serious difficulties arise in establishing appropriate techniques of evaluation. Probably the best single principle emphasizes the determination of responsibility upon the basis of sound and expert judgment by qualified persons in the community representing the various interests concerned (assuming that legislation or state regulations have not already settled the issue). The adoption of a principle or policy always carries with it the coordinate task of providing the activities through which the principle or policy actually functions. Evaluation, then, becomes primarily concerned with the degree to which the activities finally selected properly fulfill the intended purposes of the program.

The activities that follow generally constitute the program of health services. The suggested techniques of evaluation require adaptation to the established practice in a given community with respect to the agency or agencies responsible for the conduct of each activity.

Health Examinations. From an educational point of view, the health examination determines the ability of the student to engage in the regular program of the school, indicates the need for program modification in certain instances because of specific defectiveness, and serves as an educational experience wherein the child and his family learn the benefits of having a family physician as a health counselor.

The check list devised to measure the effectiveness of health exam-

inations will include items that help to answer such questions as the following:

1. Do the examinations provide information needed by the school to organize appropriate student programs?

2. Do the examinations supplement desirable information about the child which may not be obtained as well or better from another source?

3. Does the examination represent a desirable educational experience for the child and his family, leading toward improved use of family physicians or dentists?

4. Are the findings actually used to fullest advantage by the school authorities?

5. What changes in the examination procedure might bring more practical or educational results?

In this discussion it is assumed that the examining physician has the technical competence to measure health status according to acceptable medical standards of validity, reliability, and objectivity.

Health Histories. Closely associated with the health examination and sometimes a part of it, the health history contains information about the child's personal problems and presents a list of previous disorders and illnesses. In addition the health history reveals data on preventive treatments and about the family which may assist in the health guidance of the student.

Evaluation of the health-histories program will answer such questions as these:

1. Does the information obtained supplement facts available from the health examination or other sources?

2. Does the school make use of all the facts collected or are many of them superfluous for educational purposes?

3. Are the health histories readily available to all school authorities who should make use of them?

4. Do the school authorities make proper use of the health histories?

5. What changes in the form itself, or in its use, might prove more beneficial?

Observations by Teachers and Nurses. Constant health observations by qualified teachers and nurses doubtless represent a most significant technique of evaluation. Applied to the health services, these observations relate to persistent defects which indicate the need for modified educational programs, changes in the pupil's health status which suggest the completion of or need for appropriate medical or dental care, manifestations which should receive the attention of the psychologist

or psychiatrist, matters which should be brought to the attention of the home, and items for emphasis in instructional programs.

On the positive side, observations by teachers and nurses note children who consistently exemplify robust health, those who are responding favorably to corrective procedures, and those who take an active interest in helping other children in need of such aid.

Check list questions for evaluation will include the following:

1. Have teachers and nurses received adequate instruction in pupil observation to render effective service?
2. Are the services available for appropriate reference when teachers and nurses observe conditions needing attention?
3. Are teachers and nurses regarded as the focal point around which the health-services program revolves?
4. What changes in the techniques of observation might prove beneficial to the fulfillment of the total educational program?

Weighing and Measuring. Despite the criticisms often leveled at programs of weighing and measuring, these activities doubtless have value in the program of health services. As a motivating influence in health instruction, weighing and measuring serve a useful purpose throughout childhood and adolescence. Regular increase in weight and height, rather than approximation of standards contained in printed tables, represents one of the accepted means of determining health status and of ensuring normal growth and development.

Evaluation of weighing and measuring with reference to the health services includes the following items:

1. Does the school have an organized plan for the weighing and measuring of children which utilizes these data as an effective means of determining normal growth and development?
2. Is the program of weighing and measuring properly articulated with health instruction?
3. Are the facilities available to weigh and measure children without causing unnecessary confusion or annoyance?
4. Do the children themselves take an active part in this health-services activity?
5. Might the program of weighing and measuring be improved to yield richer educational advantages?

Screening Tests. These tests usually refer to the use of certain measuring instruments by teachers or nurses, applied to all pupils, for the purpose of designating those in need of further examination by a more competent specialist. The most common screening tests are for hearing and vision, although weighing and measuring and observations of

various types may result in a form of screening process. In some school systems the Schick test for susceptibility to diphtheria and the Mantoux or X-ray test for tuberculosis are regarded as screening techniques.

With limited training, teachers may use successfully the Snellen charts and astigmatic charts for testing vision. In fact the use of these measuring devices has become standard practice in most schools, with nearly all teachers colleges giving instruction in the application of such tests.

Opinion seems divided about the use by teachers of the Betts Visual Sensation and Perception Tests for screening purposes, despite the contention made by some persons that these tests may be administered by anyone.[5]

The alert teacher will detect through observation signs of visual discomfort or abnormality such as (1) swelling, discharging, or inflamed eyes or eyelids; (2) evidence of fatigue, nausea, headache, or dizziness; (3) blurred or distorted vision; (4) tendency to rub the eyes; (5) tense facial expressions; and (6) holding books too close or far away from the eyes.

Most teachers are familiar with the watch-tick and forced-whisper screening test for hearing. In recent years the audiometer has become an accepted test of this type, although the instrument requires special training by the operator for effective use.

Observational signs for defective hearing are (1) failure to respond when called upon; (2) request that words or phrases be repeated; (3) complaint of dizziness, headache, and buzzing sounds in the head; (4) tendency to pick the ear or rub it; (5) discharge from the ears, or soreness; and (6) inclination to turn the head from side to side in the attempt to locate the direction of sound.

The responsibility for diphtheria and tuberculosis tests belongs to physicians rather than teachers.

Many persons in health education believe that increased attention to the preparation of teachers for giving various types of screening tests, in addition to those currently used, would vitally improve the total effectiveness of both health services and the complete program of health education.

Guidance. Departments of guidance have at their command numerous instruments to measure interests and aptitudes, and personnel trained in interview and observational techniques. Since a host of stu-

[5] Test devised by E. A. Betts and explained in his book, "The Prevention and Correction of Reading Difficulties." Evanston, Ill.: Row, Peterson & Company, 1936.

dent problems requiring guidance stem from health disorders, persons with a background of training and experience in health and guidance may make remarkable contributions to the complete education of youth. Likewise classroom teachers and health specialists gain much practical experience in guidance by helping youth with the solution of personal health problems.

Sound guidance involves measurement by analyzing the factors responsible for the problem, applying the proper corrective procedures, and evaluating the results obtained. Well-organized schools establish a close relationship between guidance and the health services.

Immunization and Vaccination. Medical science has proved the value of immunization for certain specific diseases and constantly searches for other protective measures. The success of any program of health services may be evaluated, in part, by the use made of immunization by students and adults, irrespective of what agency in the community assumes the responsibility for administering the inoculations.

Establishment of a clear line of authority in such matters, followed by immunizations as recommended by competent medical practitioners, illustrates the success of education for both children and adults.

Follow-up Procedures. Another measure of success in health education relates to the suspected or actual cases of remediable defects. School authorities must first establish a policy with respect to how far the educational institution shall go in diagnosing unhealthful conditions among students. Most authorities recommend the policy that the school shall notify the family concerning a suspected defect in the school child, urge parents to have the child examined by the family physician or dentist, and follow the advice of the doctor or dentist in such matters. In this situation the school needs to continue with follow-up procedures until competent medical or dental authority reports that treatment is not recommended or that the defect has been corrected.

Similar follow-up measures apply to unhealthful conditions in the child's home environment. Here remediation may depend upon the cooperation of the home or recourse to one of the local welfare agencies.

Efficiency of the follow-up program is measured by the reduction of remediable health defects among the children themselves and the removal of unwholesome conditions in the environment which surrounds youth.

First Aid and Care of Sudden Sickness. Every school needs adequate provisions for rendering first aid and for giving emergency care to

those who become ill during the day. A check list to measure the efficiency of these services will include items like the following:

1. Has the school a definite policy for rendering first aid and for giving emergency care in case of sudden illness?

2. Are the persons in charge of this service properly trained for their work?

3. Are the facilities adequate to render effective service within the limits of the general policy?

4. Does the program limit treatment to first aid and take into account the liability of transporting persons in private automobiles?

5. What changes in plan or procedure might yield more tangible educational results?

Health Services for Employed Personnel. No adequate program of health services applies to students without similar provisions referring to employed personnel. Administration of these activities for employees may differ from those planned for students, but the principles remain the same. If the school expects students to have a periodic health examination, it will expect teachers and principals to have similar examinations. However, students may be examined at public expense, although teachers and principals should go to their own physicians. Evaluation techniques described previously in this section apply equally to the health services designed for all employed personnel.

Evaluation of Healthful School Living. Closely associated with health services is healthful school living. In fact several responsible leaders in the field observe no justifiable reason for separating these two major divisions. Those who prefer the two areas frequently establish the delineation by defining health services as activities applied *to* the individual to improve or protect his health, whereas healthful school living refers to things done *for* the individual in his school environment to improve and protect his health.

Evaluation of healthful school living takes into account construction of the school plant, maintenance of the plant, and health aspects of the school program.

Construction of the School Plant. Many states have adopted excellent building codes for the construction of new schools or for the remodeling of old ones. These building codes, made available by state education departments, allow sufficient latitude for the exercise of local initiative so long as the stipulated minimum essentials receive proper attention.

Although practice varies widely among the several states, most of

these codes represent the combined efforts of experienced architects, school administrators, and health specialists. They may be used with reasonable confidence as a fair measuring instrument to evaluate the health aspects of plant construction.

Bulletins accompanying and describing building codes relate to such health features as location, size of structure and plot, beauty and adaptability to purpose, safety factors, heating, lighting, and ventilation, adequacy of lavatories and toilets, drinking fountains, design to prevent noise and sound reverberation, indoor and outdoor play areas, and rest rooms and rooms for health services.

In addition to state building codes, several authors have prepared similar standards in greater detail for use in checking the adequacy of school buildings.[6]

Maintenance of the School Plant. The second factor in evaluating healthful school living relates to the proper maintenance of the building and surrounding areas. The custodian assumes an important role in this problem, assisted by administrative officers, teachers, pupils, and the lunchroom staff.

Perhaps one of the best ways of measuring these procedures involves the preparation of a score card, including many of the items appearing in the preceding section together with others pertaining to cleanliness and sanitation. Linn and others have prepared an excellent check list for custodial services which includes many health features, and Bryan suggests pertinent standards for the school-feeding program.[7]

A Healthful School Program. Although printed materials on health education and mental hygiene emphasize the relationship between a healthful school program and the growth and developmental needs of youth, few authors have attempted the task of devising a technique for evaluating this process. The increasing acceptance of standards within this area, however, suggests that interested students of the sub-

[6] G. D. Strayer and N. L. Engelhart, "Standards for Elementary School Buildings." New York: Bureau of Publications, Teachers College, Columbia University, 1933.

N. L. Engelhart, "Standards for Junior High School Buildings." New York: Bureau of Publications, Teachers College, Columbia University, 1932.

G. D. Strayer and N. L. Engelhart, "Standards for High School Buildings." New York: Bureau of Publications, Teachers College, Columbia University, 1924.

[7] H. H. Linn, L. C. Helm, and C. D. Graborkiewicz, "Check List Forms for Rating School Custodial Service." New York: Bureau of Publications, Teachers College, Columbia University, 1940.

M. deG. Bryan, "The School Cafeteria." New York: F. S. Crofts & Co., 1936.

ject might well apply themselves to the preparation of such a score card. Miller has taken the initial steps in this direction.[8]

In the meantime, persons in local communities may find some value in the questions that follow as a guide to useful evaluation:

1. Does the organization and management of the school program conform to established principles of health?

2. Does a friendly and helpful attitude prevail between administrators and teachers and between teachers and pupils?

3. Does the school program take into account the interests and capacities of pupils and allow for modifications in view of changing needs?

4. Does the program recognize the need for good hard work, but at the same time provide for periods of relaxation, and avoid hurrying and irritating experiences?

5. Does the length and arrangement of the school day take into account the established principles of growth and development?

6. Is homework reduced to a minimum and, if used at all, do students know precisely what they are to do and how they are to do it?

7. Are class sizes and seating arrangements satisfactory?

8. Does the school maintain proper liaison with the home and community in the planning and organization of the school program?

9. Do all health services recommended for and made available to pupils apply with equal force to employed personnel?

10. Has the administration provided facilities and equipment which meet the approved standards of safety and sanitation, and do teachers and pupils use these facilities in a safe and sanitary manner?

11. Has the administration given appropriate attention to salary schedules, teaching loads, tenure and retirement, sick leaves, and sabbatical leaves?

12. Does the teacher's personality and deportment set an example worthy of imitation by students?

13. Does the school atmosphere foster the basic element among students of gaining respect for self and then respecting the personalities and rights of others?

Evaluation of Health and Safety Instruction. Each of the elements described previously under administrative policy, health services, and healthful school living affects behavior that, in the final analysis, repre-

[8] B. W. Miller, "School Health Resources," *Journal of the National Education Association*, October, 1947, pp. 506-507. Also included as a leaflet in every *American Education Week* packet for 1947. Miller's check list contains items from all divisions of healthful school living.

sents the true basis of health and safety instruction. In this section attention is directed toward the component ends of instruction, usually regarded as habits, attitudes, skills, and knowledge.

Obviously one may not separate health behavior into mutually exclusive compartments of habits, attitudes, skills, and knowledge. Each of these aspects relates to the others, except that knowledge serves as a sort of common denominator to the three associated factors. Thus, in keeping with the ability and comprehension of the learner, the student needs scientific knowledge to explain the "how" and "why" in developing wholesome habits, attitudes, and skills.

The reason for grouping habits, attitudes, and skills in one of the following sections, and treating knowledge in a separate section, relates to established techniques of evaluation. The first group of attributes must depend upon the clinical approach to measurement, whereas several standardized health-knowledge tests enjoy wide acceptance.

Habits, Attitudes, and Skills. In the final analysis, the success of any program of health education depends upon how efficiently the individual customarily acts in accordance with established principles of good hygiene, his feeling toward or appreciation of health as a vital factor in happiness and success, and the skill with which he conducts himself when faced with a specific health problem.

Teacher observation serves a most useful purpose in evaluating these traits. The successful teacher first classifies the various situations involving health which surround students in their environments, then analyzes each of these situations in terms of approved conduct, and finally measures the achievement of students by the degree to which they approximate these standards.

Surveys help in the evaluation of habits, attitudes, and skills. By the continuous survey, teachers may note progress from one semester to another or from one year to the next. At other times, the teacher may compare survey results with standards proposed by national health committees or similar authorities.

Student self-appraisal forms serve the combined purposes of enabling the learner to measure his own progress and of creating personal interest in the problem at hand. For effective use the student must have the objectives clearly in mind, know the standards, and acquire skill in eliminating personal bias.

Individual or small-group conferences enable the teacher or nurse to obtain first-hand information about children that is of significant value in measurement. Perhaps the student is making exceptional health progress in view of personal disorders, problems in the home, difficul-

ties with persons at school, or long hours of work outside of school. On the other hand, perhaps he should do much better in forming desirable habits, attitudes, and skills because of favorable circumstances in the home and community. Individual or small-group conferences with pupils, and sometimes with parents and welfare workers, bring out objective data not obtained so readily in any other way.

Recourse to health-examination records, health histories, and health diaries kept by students also has a place in the evaluation of habits, attitudes, and skills. These documents, like conferences, reveal information which give substance to practical measurement.

Health Knowledge. Several authors have published standardized health-knowledge tests in recent years.[9] Some of these tests attempt to measure attitudes and behavior as well as knowledge.

For the most part standardized health-knowledge tests exemplify excellent standards of construction and ingenuity in planning the items. The majority of them employ the multiple-choice technique, true-false statements, or briefly describe health situations in which the student uses his judgment and knowledge in formulating the correct response. Standards for the grades covered by the test, scoring keys, and specific directions to follow in giving the test accompany the printed forms. The best ones have equivalent forms which enable teachers to measure progress over a given period without the risk of students recalling the correct response to items from previous experience. Standardized tests enable the teacher or administrator to compare accurately the results obtained in one class or school with another or with standards established for the country as a whole.

In addition to the standardized health-knowledge tests, teachers employ objective tests of their own construction together with essay examinations, oral discussions, and various other means to evaluate the information gained by students in the pursuance of planned and unplanned health experiences. Oftentimes these measurements more precisely relate to the subject matter at hand than do the standardized tests.

All knowledge tests serve the best educational purposes when teach-

[9] Some of the more common ones are the following:

A. I. Gates and Ruth Strang, "Gates-Strang Health Knowledge Tests." New York: Bureau of Publications, Teachers College, Columbia University, 1937.

H. F. Kilander, "Kilander Health Knowledge Test." East Orange, N.J.: Panzer College of Physical Education and Hygiene, 1936.

J. H. Shaw and M. E. Troyer, "Health Education Test: Knowledge and Application." Rockville Center, N.Y.: Acorn Publishing Company, 1948.

ers use the results obtained for later class discussion or to indicate the emphasis for subsequent instruction.

Summary

Effective measurement presupposes an aim, a series of objectives designed to indicate the specific contributions of a given program to the total educative process, and an effective program to facilitate the realization of objectives. Sound evaluation takes into account all of the objectives sought and evaluates each one of them by the best techniques available.

Due to the varied implications contained in most health objectives, both quantitative and qualitative techniques of measurement are employed. The statistical approach, based upon the law of averages, provides an excellent technique for evaluating those items which lend themselves to a numerical score. The clinical approach takes into account all factors associated with the activity, many of which require subjective judgment. Attention to validity, reliability, and objectivity applies to both the statistical and clinical approaches to measurement.

General types of evaluation techniques in health education include (1) observation, (2) surveys, (3) student self-appraisal, (4) analysis of school practices, (5) analysis of practices outside of school, (6) interviews, (7) tests, (8) diaries, (9) health records, and (10) health examinations.

An evaluation of administrative policies and procedures constitutes the first step in measurement, since the selection of activities and provisions for conducting them depend upon sound organization. Both administrators and teachers have a responsibility in adopting and effecting basic policies.

Degrees of success in conducting the program of health services are measured by the efficiency of (1) health examinations, (2) health histories, (3) observations by teachers and nurses, (4) weighing and measuring, (5) screening tests, (6) guidance, (7) immunization and vaccination, (8) follow-up procedures, (9) first aid and care of sudden sickness, and (10) health services for employed personnel.

Evaluation of healthful school living means using check lists and score cards relating to (1) construction of the school plant, (2) maintenance of the school plant, and (3) the organization and conduct of a healthful school program that provides a wholesome environment for students and sets an example for the home and community.

Measurement in health and safety instruction encompasses the standards prescribed for the health services and healthful school living and

employs other techniques to evaluate behavior and information. The conduct of all activities in health services and healthful school living affects the complete health education of youth. With specific reference to health and safety instruction, evaluation techniques apply to (1) habits, attitudes, and skills, and (2) knowledge. Measurement of behavior (habits, attitudes, and skills) depends largely upon the clinical approach involving observation, student self-appraisal, and conferences. Several standardized health-knowledge tests and other pencil-and-paper examinations help to determine what the student knows about the subject.

The present need for improved techniques of evaluation in health education points directly toward a corresponding need for teachers and administrators who are better prepared to accept the responsibilities of leadership in organizing and conducting the program in the schools and colleges.

Questions and Problems for Discussion

1. What are the current trends in measurement, and how do these trends apply specifically to health education? What future directions in measurement might prove most helpful in health education?

2. Discuss the relationship of measurement to aims and objectives. In what respects are these factors (*a*) identical, (*b*) mutually exclusive, or (*c*) opposed?

3. Why does health education need both the statistical and clinical approaches to evaluation? Which approach appears better suited to measurement in health education? Why? Will your answer apply, with similar accuracy, in the years ahead? What factors or forces might effect certain changes in your answer?

4. Discuss the elements of validity, reliability, and objectivity as applied to both the statistical and clinical approaches. Give examples to substantiate your points of view. What does your answer suggest for the preparation of teachers and administrators in measurement?

5. Review the section on Techniques of Evaluation. Can you suggest and describe others? Arrange your total list in rank order, based upon their value in evaluating the complete program of health education.

6. What techniques might be employed to evaluate administrative policies? State *three* administrative policies and explain how each one of them might be measured effectively. What use would you make of these evaluations in a practical situation?

7. Propose a plan for measuring the success of a health-services program in a given public school or college. Explain how you would make practical use of the results.

8. Relate how you would go about the problem of measurement in healthful school living. First establish the areas to be evaluated, and then indicate the precise techniques of measurement. Outline a research study in this area.

9. How would you evaluate the success of health and safety instruction on the basis of behavior? List the major items for coverage, and explain the techniques for measuring each one of them.

10. Obtain samples of *three* standardized health-knowledge tests. Evaluate these tests according to the (*a*) purpose or purposes as described, (*b*) degree to which the test actually measures what it is supposed to measure, (*c*) selection and arrangement of test items, (*d*) practicability of the scoring key, (*e*) clarity and completeness of the directions for teachers and students, and (*f*) all-round usefulness of the test for measurement and instruction.

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CHAPTER 12

PROFESSIONAL PREPARATION FOR HEALTH EDUCATION

The Broad Viewpoint. This chapter provides a fitting summarization for the entire text. Throughout the preceding chapters the reader may have said to himself again and again, "The success of this particular activity depends largely upon the human resources available to plan or conduct the enterprise."

The availability of human resources involves not only the presence of individuals with the time and energy to direct a specific aspect of health education but relates with even greater emphasis to the competence of these persons to perform their assigned tasks with a high degree of proficiency. The presence of a school superintendent or principal, for example, does not in itself guarantee sound policies and procedures in health education. The classroom teacher in the elementary grades may feel quite at home with the academic subjects but look upon health as a stranger to the schools. The physical educator who is highly skilled in neuromuscular activities but without special preparation in health education oftentimes makes a mess of things or shirks essential responsibilities if the administrator places him in charge of the school-health program. Such examples are legion.

Perhaps the real issue lies in the disparity between theory and practice. Leaders in health education have analyzed many of the problems associated with this field, and the fruits of their efforts present a sort of blueprint of activities and standards.[1] But the one problem essential

[1] Numerous documents contain excellent standards in health education, only partially realized in most schools:

"Fit to Teach," *9th Yearbook*, Department of Classroom Teachers. Washington: National Education Association, 1938.

"Safety Education," *18th Yearbook*, American Association of School Administrators. Washington: National Education Association, 1940.

"Health in Schools," *20th Yearbook*, American Association of School Administrators. Washington: National Education Association, 1942.

National Conference for Cooperation in Health Education, "School Health Policies." New York: Health Education Council, 1946.

Joint Committee on Health Problems in Education, "Health Education." Washington: National Education Association, 1948.

to success remains unsolved—qualified personnel. Under normal conditions educational theory precedes practice by at least a quarter century, hence the time may be propitious for emphasis on the implementation of proposed health standards.[2] Basically, this means the professional preparation of various school employees for their respective roles in health education.

The task of professional preparation assumes rather gigantic proportions in view of educational tradition and the number and variety of persons concerned with health education. The tradition of specialized preparation favors one program of studies for the elementary classroom teacher, another professional route for instructors in the secondary schools and colleges, and still another set of standards for administrators. All classroom teachers and administrators and several instructors in the secondary schools and colleges have natural responsibilities in health education. While certain areas of preparation are common to all of these specialists, such as foundation courses in education, most of the professional routes parallel each other. This fact may help to explain the functional parallelism of these experts so frequently observed in the conduct of their school and college activities.

The variety of persons concerned with health education poses another problem. Besides the instructional and administrative groups, mentioned above, a number of individuals from the service areas have broad health responsibilities. These include the examining physicians, dentists, psychiatrists, nurses, dental hygienists, guidance counselors, cafeteria personnel, custodians, attendance officers, and others.

Still another problem in professional preparation relates to the need for articulating the school-health program with similar programs conducted in the homes, by other official organizations, by voluntary agencies, and by private-enterprise groups. Few other programs in schools require such a wide range of essential community interrelationships.

Professional Schools and In-service Education. All professions recognize the need for certain basic information and skills acquired in colleges and universities with supplementation of this learning throughout the years of active duty. Both undergraduate and graduate professional schools attempt to present an organized and systematic group of experiences designed to lead the student, step by step, through the intricate pattern of functions he may be expected to perform. But true professional preparation represents an on-going process from the time a person selects his major field of emphasis until he retires or chooses

[2] Emphasis on health education as such began about 1920.

another type of occupation. This latter period is known as in-service training or more appropriately called in-service education.

The professional schools have numerous obligations of a composite nature. In the first place they must evaluate accurately the specific functions implied in a given profession and organize the learning experiences of the student to equip him with the knowledge, skills, attitudes, and techniques essential to success in the performance of these functions. Such functions relate not only to the profession per se but to the associated factors of other professions and to the total welfare of society.

In the second place professional schools must observe certification or licensing standards imposed by certain states in which the graduate expects to work. These standards vary in precise requirements, although the general pattern remains the same for all states that have established certification for a given profession.

In the third place professional schools must remain constantly alert to change, for they definitely set the pace for professional accomplishment. The degree to which they properly observe trends, and utilize these signs to redirect the techniques of preparation, largely determines the progress of any social venture. Such progress means better service to the groups dependent upon the specific profession and usually leads to higher standards of certification. Some authorities refer to this process as the integrity of the professional institution.

Occasionally the professional school loses sight of long-range values and continues with outmoded procedures unsuited to the persistent demands of changing consumer groups. Health education presents several illustrations of this principle. Boards of education in some communities, for example, have suggested to the school superintendent the desirability of employing nurse-teachers, but the administrator, interested primarily in a subject-matter curriculum, has advised against the procedure on the ground that the teachers colleges do not train persons with these qualifications. Frequently college students complain about courses in freshman hygiene because such courses fail to include many of the essential health problems of later adolescence, although the instructors follow the precise techniques they learned in their major courses. Health departments often raise the issue of the school's negligence in not establishing programs of health education that articulate with similar programs operated by boards of health—which may account, in part, for the increasing number of schools of public health with departments of public-health education.

Preserving the professional integrity of the institution engaged in

the education of teachers and administrators suggests the need for critically analyzing the forces and factors indicative of change in procedure. On the one hand, the institution may not profitably move too rapidly in any specific direction. The preparation of a professional group for which the supply exceeds the demand leads to frustration among those who cannot obtain satisfactory employment and to complaints expressed by employing authorities that the institution has improperly viewed the existing trends. On the other hand, the professional school has the moral obligation to assist in creating the demand for more efficient teachers and administrators who utilize the resources of scientific discovery and invention for the improvement of society as a whole. The traditional college or university sees these two points of view in direct conflict, and usually follows the pattern of *status quo* to avoid criticism. The forward-looking college or university takes into account the needs of society and maintains a steady balance between tradition and the frontier. In any event, such issues pose real problems for the institution desirous of exercising effective leadership in professional education.

Colleges and universities engaged in teacher preparation need extensive programs of health education for the welfare of the students themselves in addition to professional courses for later use by these persons. Instruction in personal and community hygiene and in effective health counseling not only helps the prospective teacher or administrator to maintain his own health, but also instills in him appreciation and understanding of health education as a valuable attribute of the modern school program.

In-service education begins immediately upon graduation from a professional school and continues throughout the years of active duty. The exigencies of the position held may demand competence beyond that obtained prior to graduation. The science of education gradually unfolds new procedures or improved techniques which the truly professional person may not profitably ignore. Obtaining a better position or rendering better service in the position held almost always relates directly to in-service education.

Most teachers and administrators prefer to follow the established pattern of conscientious search for appropriate methods of professional improvement. The American Council on Education states the problem succinctly: [3]

[3] "The Improvement of Teacher Education," Report by the Commission on Teacher Education, p. 173. Washington: American Council on Education, 1946.

> If these powers [potential capacities of teachers] are to increase steadily—as it is both possible and desirable that they should do—the working situation should be further conducive to continuous and professional development. The school system is central to the in-service education of teachers, and provisions for such education are essential to a good system.

Among the numerous methods of in-service education, the professional worker selects the one best suited to the problem at hand. Advanced university courses or summer sessions have the advantage of providing an orderly and systematic group of experiences, especially for the young teacher or principal, although such courses do not always fit the immediate needs of the individual. Workshops or working conferences appeal to many educators because of the specific bearing of the experience upon the practical requirements of the professional worker and, if the leadership is available, such conferences prove helpful. Before the days of workshops, which later became working conferences, the institute served a useful purpose as a technique of in-service education. The well-planned institute still has marked advantages, largely because a specialist in the given area guides the activity without permitting it to degenerate into a meaningless discussion monopolized by persons who want to share their experiences with anyone kind enough to listen. Special conferences with supervisors or individuals competent to give advice usually are open to teachers who seek practical and timely assistance. Special lectures may be arranged for groups with common problems, followed by a discussion or question period to focus attention on controversial or significant issues. Reading the latest professional books, periodicals, and reports helps to acquaint the administrator or teacher with the current developments of his specialized area, especially if he reads widely and applies the new concepts to his contemporary duties. In fact, the success of all in-service education depends in large measure upon the sober reflection given by the individual to ideas and ideals acquired from outside sources and to the practical application of these learnings to his professional work.

State Responsibility and Certification. With the passing years state responsibility for public education becomes more and more an accepted principle. Local communities gradually relinquish additional powers to the state which sets minimum standards deemed necessary for all school districts within the commonwealth. The reasons proposed a few generations ago in favor of more state activity in education now are voiced by responsible groups for greater Federal support

of and stimulation to the cause of education. Years elapsed before the local school committees of New England accepted gracefully the court decisions that the child belongs to the state in educational matters, and the possibility of similar authority finally passing on to the Federal government arouses the opposition of those who cherish the principle of state autonomy.

Under existing conditions the state, largely through its official department of education, adopts numerous minimum standards, with local districts encouraged to exceed these requirements. This principle applies to the preparation and certification of teachers and administrators as well as to the length of the school year, the construction of buildings, and the minimum salaries of employed personnel. Obviously the variety and level of these standards depend upon the leadership exerted by the state education department, the professional competence of school people, and the willingness of the public to support recommended proposals.

Massachusetts first recognized teacher education as a state function with the opening of a state normal school at Lexington in 1839. Other states soon followed the example of Massachusetts until normal schools with 1- or 2-year courses extended throughout the land. Most of these early normal schools have become 4-year state teachers colleges, and a few of them have grown into state colleges or universities.

Strangely enough, perhaps, the normal school at Lexington gave considerable emphasis to the subject of hygiene, probably because the person largely responsible for this school, Horace Mann, never possessed robust health. The imposing plans for health education in state normal schools envisaged by Horace Mann failed to materialize in institutions established subsequently, and years passed before these schools took cognizance of the need for health programs either for the students themselves or as a means of preparing graduates for their professional activities in public schools.

Only a few states require special certification for full-time health teachers, although a greater number of states stipulate that the elementary classroom teacher shall have a professional course or two in the methods and materials of health education. In most states the teacher of physical education may legally give instruction in health. Practically no preparation in health education is required of school administrators.

In the immediate years ahead, the responsibility of the state in adopting certification standards for health education appears inevitable. Laws require school-health examinations, yet the qualifications of physicians

and dentists to make these examinations an educational experience receive limited attention. Regulations stipulate that public-school children shall pursue courses in health and safety instruction, yet teachers lack the professional preparation to guide the health experiences of children. Numerous documents contain standards for the organization of health education, but school administrators have only a vague notion concerning the implications of these standards.

Certain states have forged ahead in the past decade to effect plans for the preparation and certification of school personnel in health education. These plans tend to implement the health standards imposed by law or regulation and to activate the procedures recommended by informed national committees. These states set a pattern for others to follow.

Today any state interested in the problem may establish suitable standards for the certification of school personnel in health education or provide the essential health activities for students undergoing preparation in state-supported colleges or universities. Assistance may be obtained from such states as California, New York, Ohio, Michigan, and others where significant progress in the preparation of such standards is under way. The United States Office of Education, the American Public Health Association, the American Association for Health, Physical Education, and Recreation, the Joint Committee on Health Problems in Education, and several other organizations or professional associations stand ready to help state education departments requesting advice about these matters. Many state associations for health and physical education have undertaken the task of encouraging the state department of education to adopt minimum standards in health for the certification of teachers and administrators.

The sections that follow relate to the health education needed by various types of employed school personnel. In each instance the minimum or most essential health functions appear for which the person should assume at least a partial obligation, followed by a summary of areas designed to produce professional competence. The areas do not pretend to indicate the specific courses in the college curriculum, but to point out the functional elements for use by a state or teacher-education institution in the organization of professionalized subject-matter experiences. The wide variation in subject-matter content among institutions using similar course titles has led gradually to the substitution of functional areas for courses as an improved means of establishing certification requirements.

Elementary Classroom Teachers. The somewhat trite expression, "as the teacher so goes the school," finds immediate application in health education. The teacher's personal health represents an important factor in predicting his success as a leader of children by the example he sets for student emulation and in the respect accorded health education by parents and families living in the community. Employing authorities give increasing attention to the health of teachers, and professional schools tardily raise the health requirements for college entrance as they gradually provide better health services and instruction in hygiene for prospective teachers.

In addition to the numerous ramifications of personal health, the elementary classroom teacher occupies a most strategic position in guiding the health development of children under his supervision. He prepares students for the periodic examination and assists the specialists in health services with the examination. He observes signs of deviation beyond the limits of established normality with respect to organic defects and disease and promptly refers such cases to the proper authority. He conducts the screening tests of vision and hearing and supervises the weighing and measuring of children to denote progress in growth and development. He serves as the chief health counselor in resolving the individual problems of students in his class. He organizes and conducts systematic experiences in health and safety instruction to facilitate the inculcation of desirable habits, attitudes, knowledge, and skills. He cooperates with the nurse in acquainting parents or the family physician or dentist with abnormal conditions found in children by observation or examination and in need of professional services. He enlists the aid of public-health or welfare agencies if the case warrants the kind of attention these organizations are prepared to give. He knows the standards of healthful school living and helps to secure these benefits for pupils and for himself. He renders first aid when an accident occurs and provides emergency care for sudden sickness.

Competence in performing the above functions cannot be left to chance. Professional schools have the responsibility of graduating classroom teachers who know how to perform these activities in an efficient and acceptable manner. State certification should encompass these areas as well as those relating to instruction in the academic subjects. The qualified administrator encourages in-service education for elementary classroom teachers in need of supplementary health instruction occasioned by deficiencies in earlier preparation, brought about

by recent scientific developments, or resulting from health problems peculiar to a given school.

The areas of professional preparation designed to qualify the elementary classroom teacher for health education include those basic to all educational endeavor and others with more specific application. A thorough and working knowledge of growth and development represents a primary consideration, with attention to the interrelationship of physical, mental and emotional, and social factors. Interpretation of the avowed objectives of education in terms of child health suggests another area of concentration. Obviously the classroom teacher must be prepared to assume his proper role in the programs of health services and guidance, healthful school living, and health and safety instruction. And lastly he needs preparation in the foundations of health education as a basic social problem in America, and this includes sound principles of organization and conduct within the school, home, and community.

Health Teachers in Secondary Schools and Colleges. This section deals with specialized teachers of health in secondary schools and colleges that follow the customary plan of institutional departmentalization and the employment of staff personnel qualified to give instruction in a particular subject or area. Many administrators continue to delegate health instruction to physical educators, to teachers in the biological or social sciences, or to home economists. Notwithstanding the value of diversified attention to health instruction by various departments of the school or college and the significant contributions made by physical educators and others, the fact remains that health and safety deserve the high quality of instruction enjoyed by students in academic subjects. To this end, the trend of educational progress moves in the direction of specialized teachers for health and safety with appropriate certification standards established by state departments of education.

The functions of health teachers in secondary schools and colleges include most of those outlined above for elementary classroom teachers with the addition of several others. To perform these duties with the greatest efficiency to the school and satisfaction to himself, the teacher must have a sincere interest in the individual health problems of students and a keen desire to instruct youth in the techniques of wholesome living. He must be able to organize the program of health instruction within the framework of adopted school or college policies and to help in the formulation of new policies directed toward the improvement of health in the school and community. Student health problems, needs, and interests constitute the basic course of study, supplemented

by instruction given in such allied subjects as physical education, the biological sciences, and home economics. The health specialist leads the way in the preparation of curricular materials as well as in the selection of textbooks and other teaching materials. As a member of the health council, the specialist assumes leadership in organizing the school-health program and takes an active part in all health activities planned by the educational institution or community. He becomes an active member in his professional association, contributing to the development of this association on the local, state, and national levels.

In small schools and colleges where the health teacher must give instruction in other subjects, the professional person strives to meet the minimum certification requirements in all of the programs with which he is associated. The additional preparation increases his value to the school or college and improves his opportunities for greater service later in a larger institution.

The preparation of health teachers in secondary schools and colleges involves several areas worthy of thoughtful consideration. In the first place they must possess sound health and emotional maturity. The health teacher with remediable defects and abnormal appearance has no more place in this program than the person easily kindled to unjustifiable heights of optimism or inclined toward fear and pessimism. Institutions preparing teachers should exercise effective guidance in keeping such persons out of health education as a profession. On the cultural side the health educator needs the identical preparation expected of teachers in the academic subjects. The basic sciences give him a broad understanding of chemistry and physics, biology, anatomy and physiology, bacteriology, and the social sciences. Minimum essentials in the foundations of education relate to educational psychology, educational sociology, history of education, and the techniques of curriculum construction.

Within the specialized area of health education the specialist must have a thorough and practical understanding of growth and development. The essentials of school-health education and public-health education come within the proposed divisions described earlier as personal regimen, safety, mental hygiene, social hygiene, professional health services, public health, and temperance.[4] The underlying principles of health education tie together the practical application of these divisions to the health problems of the school, home, and community.

Academic degrees required by the school or college of instructors

[4] Described on p. 259.

in academic subjects should be required equally of special teachers of health education.[5]

The Health Supervisor or Coordinator. The broad range of health-education activities within the school itself and the need for coordinating these activities with problems in the home and community lead naturally to the employment of a health supervisor or coordinator responsible for promoting and articulating the entire program. Such persons may be employed by the board of education, board of health, a voluntary agency, or jointly by two or more of these organizations. When employed by the board of education, this person usually holds the title of health supervisor or coordinator; if employed by the health department, he is designated as a public-health educator or coordinator. Irrespective of the employing authority, this person renders essentially the same functions with emphasis upon the duties legally assigned to the governmental agency to which he belongs.

Strangely enough perhaps educational authorities have largely neglected to establish the functions rightfully performed by the health supervisor or coordinator, and few states have prepared certification standards for this important office. On the other hand public health has forged ahead and proposed rather definite standards for the health educator, including areas of desirable professional preparation in this office.[6]

The functions of health supervisors or coordinators outlined below follow the general pattern proposed by the Committee on Professional Education of the American Public Health Association with emphasis on and interpretation of the duties of such specialists in the public schools.[7]

1. To assist in organizing a program of health education designed to meet the needs of the community in terms of local, state, and national implications.

[5] See Committee on Educational Qualifications of Health Educators, "Preparation of Teachers for the Program of Physical Fitness through Health Education." Washington: U.S. Office of Education, 1943. Also "Educational Qualifications of Health Educators," *American Journal of Public Health*, Vol. 33, No. 8, August, 1943.

See also report, "The National Conference on Undergraduate Professional Preparation in Health Education, Physical Education and Recreation." Chicago: The Athletic Institute, 1948.

[6] "Educational Qualifications of Health Educators," *American Journal of Public Health*, Vol. 33, No. 8, August, 1943.

[7] *Ibid.*

2. To utilize the cooperative working relationships between all agencies (official, voluntary, and private) for the location, definition, and solution of health problems among youth and adults.

3. To establish programs of in-service education for employed school personnel.

4. To provide consultation and guidance services to local groups in the study, development, and improvement of their health activities.

5. To ensure a complete health-education program in schools, including adequate provisions for the health services, healthful school living, and health and safety instruction.

6. To promote a continuous program of appraisal in health education for evaluating the effectiveness of existing procedures and for indicating the desirability of needed change.

The areas of preparation for the health supervisor or coordinator involve personal qualifications as well as technical expertness. On the personal side, the individual needs sound health, creative and leadership ability, good judgment, and a pleasing appearance. Adaptations of the technical qualifications reported by the American Public Health Association [8] provide a summary of essential areas:

1. A broad cultural background comparable to that of supervisory personnel in other fields.

2. Familiarity with the basic biological and social sciences.

3. Extensive preparation in the foundations of education, including the nature of the learning process, societal interrelationships, and the functional curriculum.

4. An understanding of and ability to recognize normal and abnormal manifestations of growth and development.

5. A knowledge of the principles, organization, and supervision of the school and community health programs, including the health services, healthful living in the home and community, and health and safety instruction.

6. Experience in conducting successfully at least one of the major divisions of health education (health services, healthful school living, or health and safety instruction) to facilitate the in-service education of school personnel and to utilize the resources of out-of-school groups.

Since the health supervisor or coordinator works with a large number of specialists within the school and must establish numerous relationships with families and community agencies outside the school, the person in this position needs at least the equivalent of the Master

[8] *Ibid.*

of Arts or Master of Science degree from an approved college of education or school of public health. For persons who will occupy positions of this kind, major departments in graduate schools of education should provide rich experiences in public health whereas schools of public health cannot profitably neglect the basic requirements stipulated by colleges of education.

The Physical Educator. In many schools and colleges the administrative authorities expect physical educators to give the courses in health and safety instruction or hygiene. Oftentimes the physical educator assumes the responsibility for directing the entire program of health education. These procedures follow tradition and have some justification from the standpoints of both professional preparation and opportunity. For many years the physical educator represented the best qualified teacher on the school or college staff in his knowledge of human structure and function, nutrition, exercise, sleep and rest, emotional and social adjustments, control of infections, and other factors associated with normal growth and development which relate to a well-rounded program of health education. Likewise opportunities abound in physical education for the inculcation of habits, attitudes, and skills of healthful living and for guiding the student toward the solution of individual and perplexing health problems. In fact, the gradual extension of professional preparation for the physical educator from four to five years was occasioned largely by his need for additional instruction in health education and allied fields.

As schools and colleges give increased attention to health education, however, more specialists are employed in this field. Many of these specialists are former physical educators who have acquired additional preparation in graduate schools of education or schools of public health. Doubtless the majority of health and hygiene teachers in the schools and colleges received their initial professional preparation in physical education.

Teachers of physical education have numerous opportunities in their program of activities to utilize and strengthen health education. Prior to attending scheduled classes of physical education or participating in competitive athletics, the student receives a health examination. Observation of pupils during activity classes often reveals signs of abnormality deserving medical attention, and the desire to engage in physical exercise or athletics encourages students to have their remediable defects corrected. Physical education may contribute to healthful school living by instilling habits and attitudes toward cleanliness and sanita-

tion in the shower bath after exercise, by the care given to providing a clean uniform and a sanitary gymnasium, and by the friendly relationships normally existing between students and teacher in physical-education classes and after-school recreational activities. Aside from the classes in health and safety instruction, the physical educator has a unique opportunity to teach most of the essentials of health in connection with the activity program; personal regimen, safety and first aid, mental hygiene, social hygiene, professional health services, public health, and temperance. The degree to which the physical educator fulfills his obligations in these matters depends largely upon his preparation in professional school or in-service education.

Even though educational trends move in the direction of an increased number of health-education specialists in schools and colleges, as seems probable, the physical educator of the future will need a strong professional background in health education. In addition to the cultural endowments expected of all teachers, the biological and social sciences prerequisite to major study in physical education, and the various sciences relating to growth and development and to human structure and function prescribed in the professional program, the physical educator should prepare himself in health education. Special preparation in health education for the physical educator includes a thorough understanding of the essential features underlying the health-services program, together with his part in making the program effective, an appreciation of his opportunities and responsibilities in the favorable conduct of healthful school living, and efficiency as a teacher of health and safety, either as such instruction applies indirectly to his activity courses or in the specific health and safety classes to which he may be assigned.[9]

Teachers of Biological Science, Home Economics, and Others. Notwithstanding the fact that all instructors in secondary schools and colleges have numerous opportunities to teach health either directly or indirectly, certain instructors enjoy these advantages more than others. This section attempts to summarize the functions and areas of preparation in health education applicable to these specialists.

Biological Science. So many of the planned experiences in biology courses of study and textbooks deal with health that teachers of this subject often represent the principal health educators in secondary schools. Some states even witness quite a struggle between the teachers

[9] Further discussion of the interrelationships between health education and physical education appears in Chap. 10.

of biology and physical education concerning which group shall give the health instruction. Doubtless this controversy will continue until the field of health education has attracted to it a sufficient number of specialists and school authorities are willing to employ these experts.

On the credit side, the average teacher of biology has an excellent background in the basic sciences and knows how to teach. He may bring to health instruction a wealth of accurate factual information which serves as the foundation for desirable habits and attitudes. On the debit side, he sometimes glorifies the accumulation of knowledge, neglects the important factors of habit formation, and overlooks the powerful influence of acquiring wholesome attitudes. As a teacher of an academic subject, he may place a premium on the standardization of instructional procedures and fail to take into account the individual and persistent health problems of adolescent youth. He seldom appreciates the necessity of working with community groups and of seeking their aid in the solution of health problems. Most teachers of biology need additional preparation in the areas of mental hygiene, social hygiene, public health, and community organization.

Many teachers of the biological sciences have swelled the ranks of health-education specialists, rendering effective service in this relatively new profession. Health education needs more persons with an undergraduate major in the biological sciences who continue their professional preparation and finally become well-qualified teachers of health and safety.

Home Economics. Closely associated with teachers of biology because of their background in science, the home economists assume an important role in health instruction. These persons thoroughly understand the essentials of nutrition, an area which bulks large in any program of health education. The home economists represent the best persons in the school to give advice about clothing, a subject of practical value to everyone. Their appreciation of problems relating to homemaking should encourage school administrators to extend the sphere of influence of these specialists, not limiting their instruction to the relatively few young women who enroll in household arts, but making available instruction in homemaking to all students attending the secondary school.

Either as a specialized teacher of health or as one of the instructors making a significant contribution to health education, the home economist occupies an important position. The tragedy of the home economist teaching a few young women how to make a small portion of

delicate lemon sauce in a beautifully appointed laboratory while the rank and file of students select unwholesome and indigestible foods in the school cafeteria illustrates the glaring need for a more functional curriculum in secondary schools.

In the years ahead the home economist should take an active part in health education. Upon the foundation of her background of preparation and experience, she may easily acquire additional competence in the health services, healthful school living, and health and safety instruction. The immediate next step in administrative planning should find the home economist in charge of school cafeterias, thus elevating this service to the level of an educational laboratory wherein students acquire the skills and knowledge of value to them during the period of growth and development and later on as parents in the home or as citizens in the community.

Other Teachers. Numerous other teachers in the school contribute to the program of health education. The teacher of mathematics has rare opportunities to investigate the economic factors of health in the purchase and prices of foods, whether it is cheaper and more satisfactory to own a home or to pay rent, the cost and true value of various forms of health insurance, and budgetary items relating to sickness and hospital care. The teacher of fine arts helps in the development of posters and other graphic media that objectify the health lessons. The teacher of social sciences contributes to health education by tracing the social, political, and economic forces which have given rise to numerous health practices and in the prediction of future trends.

The English teacher may stimulate interest in health. Much of the classical literature alludes to health problems that affected the lives of people at a given period. The emotional and social conflicts depicted in books show, either by statement or implication, the health conditions existing at that time and place. Oral and written compositions with a health motive enable the youth to associate the subject with his own experiences.

The rapidly expanding driver-education courses in secondary schools seem to demonstrate rather clearly three different things: (1) how a voluntary organization or private enterprise may stimulate public opinion toward adopting a program for the schools of value to the community; (2) how the curriculum may be redirected, at least in part, to serve the purposes of the community; and (3) how the best qualified department in the school may assume the instructional task of teaching a new activity. Considering the history of education in light of the forces responsible for its evolution, a practical student of the subject

registers no surprise that driver education was forced upon the schools instead of being sought by the educational authorities. This history has characterized many educational innovations. Not only have the voluntary agencies and private-enterprise groups encouraged the schools to offer courses in driver education, but these organizations furnish dual-controlled automobiles and in-service education for teachers of such courses. Certainly driver education possesses great value in the protection of lives and property. If the school provides instruction in automotive repair, as part of its vocational or industrial-arts program, the teacher of this subject often becomes the instructor of driver education. In this way industrial arts or vocational education contributes to the program of health and safety.

The number and variety of specialized teachers in the secondary school who may assist with the program of health education extends to nearly all departments. The qualified administrator or health coordinator will make use of these resources. In the future perhaps an increasing number of states will follow the lead of New Jersey, where all teachers of secondary-school subjects must have completed at least one course in health education as a condition of state certification.

Health-services Personnel. Problems associated with the appropriate preparation and certification of health-services personnel challenge the attention of both professional schools and state departments of education. The wide variety of these services and the number of specialists involved tend to complicate matters for the professional school desirous of graduating efficient personnel and to puzzle state-education authorities concerned with protecting the best educational interests of the commonwealth. The list includes guidance counselors, school physicians, school dentists, school psychiatrists or psychologists, school nurses, dental hygienists, cafeteria directors, and custodians.

Guidance Counselors. Most guidance counselors receive excellent preparation in the duties they are to perform in the health services, although the articulation of these services with the entire school-health program often escapes the person employed as a guidance specialist. The high degree of specialization among school personnel and the tendency toward departmental separation account for this lack of unified effort in attacking the problems of youth.

Since many problems confronting the student arise from unhealthful conditions of the individual or in his environment, guidance counselors must recognize the source of these problems and understand the approved means of alleviating them. The needs of youth in making

proper adjustments to the home and community and in preparing for a satisfactory vocation impose upon the guidance counselor deep obligations requiring a thorough understanding of health education in schools and public-health education in the community.

School Physicians and Dentists. Based upon traditional practice, the chief responsibilities of school physicians and dentists relate to annual or periodic health examinations of students and to the correction of remediable defects through the efforts of the home or welfare agencies. Within recent years professional literature has abounded with recommendations that the schools should have a greater number of physicians and dentists assigned to them and that the functions of these specialists become more educational in nature. The same literature proposes that the school physician or dentist shall exemplify professional preparation equivalent to the standards approved by his fellow specialists engaged in private practice and, in addition, he shall acquaint himself with educational procedures including the methodology of instruction.

In brief, the school physician should have graduated from an approved medical school with the degree of Doctor of Medicine, have completed the standard internship, be licensed to practice medicine in his respective state on a permanent basis, belong to the American Medical Association as an indication of his professional standing, have experience in a children's hospital, demonstrate a sincere interest in children, and show evidence of special preparation in health education.

The proposed standards for school dentists are no less rigid. He should have graduated from a recognized school of dentistry with the degree of Doctor of Dental Surgery, hold a permanent state license to practice his profession, belong to the American Dental Association, have completed postgraduate work in the dental care of children, and understand the principles of teaching and education.

The American Public Health Association has prepared an excellent brochure on the qualification of school physicians.[10] This report states that the school physician shall have a thorough knowledge of the following:

1. The growth and development of normal children.
2. Diseases of children.
3. The values, methods, and limitations of advisory service to parents, teachers, school administrators, and pupils concerning the promotion of optimum growth and development.

[10] "Proposed Report on the Educational Qualifications of School Physicians," *American Journal of Public Health*, Vol. 34, No. 9, September, 1944.

4. The over-all school program and the types of adjustment which are possible and necessary for health reasons for some children.

5. Methods of coordinating the medical and nursing services and other school-health work with classroom instruction, physical education and recreation, lunchroom and nutrition services, so that he may assist all school personnel to make their most effective contribution to optimum pupil health.

6. The facilities available for treatment in the community (chief of which is the private physician).

7. The techniques of explaining to the parents, child, and teacher the reasons why good health practices are desirable and why treatment is necessary.

8. Individual and community health problems which may be attacked through education.

9. The place of the school as an integral part of the community's health resources.

The report proceeds to describe the duties and functions of school physicians in some detail, under such general headings as the following:

1. Periodic medical examination of children.
2. Professional consultation in health education.
3. Responsibility for the prevention and control of communicable diseases in the school.
4. School safety and safety education.
5. Directing teachers and school nurses in systematic and continuous observation of the health of pupils.
6. Selecting pupils for special educational programs.
7. General supervision of sanitation and other environmental health factors within the school buildings and grounds.
8. Medical advice to school authorities on mental and emotional health influences.
9. Professional guidance in the field of teacher health.
10. Administrative functions including supervision of departmental personnel, preparation of budgets, development of health and medical records, and statistical analysis of results.
11. Responsibility to the school system and the community for integrating the school-health program into the public-health program of the community.
12. Incidental functions and duties including cooperation in the development of the physical-education program according to sound health standards, advice to cafeteria personnel on sanitation and nutritional adequacy of foods, assistance with the in-service education of

teachers, elimination of factors which impede medical care and other remedial work, and assistance with vocational guidance of the physically handicapped.[11]

Quite obviously these excellent standards represent ideals toward which education should strive, yet the practicality of the problem would seem to justify further discussion in a book of this type concerned with trends and the political, economic, and social forces associated with these trends. Perhaps the crux of the matter is in finding satisfactory solutions to three basic and contributing problems: (1) Are these men now available to the schools, or is it probable that they will become available? (2) Can public education afford to employ men with these qualifications? (3) Will they fit into the school organization if they become available?

In answer to the first question concerning the availability of men with these qualifications now and during the next generation, perhaps the bulk of tangible evidence favors the negative point of view. Most medical and dental schools have a long list of applicants seeking admission, and these institutions select only candidates with the highest potential competence. The program of studies in these colleges consistently emphasizes the care and treatment of patients rather than the education of normally robust individuals and points directly toward the private practice of medicine or dentistry. The general scarcity of medical and dental practitioners throughout the country illustrates the principle of supply and demand and the great majority of able graduates will enter private practice. Specialization becomes more and more an accepted routine for these men to follow, and very few if any medical schools contemplate establishing a postgraduate course for school health. The tradition of school health for the physician or dentist as a second-rate or third-rate job, wherein the average practitioner neither enjoys the professional respect of his colleagues nor the educational recognition of school authorities, serves as a restricting influence for many of these men. Requiring doctors and dentists to pursue additional courses in a graduate school of education, although perhaps sound in principle, often eventuates into a reminder of the age-old and earthy dictum that a horse may be led to water but he can't be made to drink; many courses in education require a kind of reflective thinking based upon a series of concepts so foreign to the preparation of doctors

[11] For a similar although more exhaustive discussion of the topic see National Conference for Cooperation in Health Education, "The School Administrator, Physician, and Nurse in the School Health Program (Functions and Education)," *School Health Monograph* 13. New York: Metropolitan Life Insurance Company.

and dentists that they attend the classes and go through the motions but profit only to a limited degree from these experiences. All things considered, therefore, serious doubt exists concerning the probable availability of adequately trained physicians and dentists for school work within the immediate years ahead.

Can public education provide the necessary monetary rewards to attract qualified doctors and dentists? Many of the statements expressed in the paragraph above apply to this question. Even the customary policy of boards of education to establish salary schedules for these specialists on a par with secondary-school principals fails to approximate the income of the qualified private practitioner. Part-time physicians and dentists usually work in the schools for less than they might command if they remained in their offices, and school-health affiliation restricts the established man in building up his personal clientele. Except for the young physician or dentist who uses the school-health program as a means of acquiring professional experience or of becoming acquainted with prospective patients, or for the older man who does not enjoy the rigorous and confining experiences of private practice, a goodly number of physicians and dentists look upon school health as a sort of semivoluntary contribution of professional services to a worthy cause—something like the free clinics operated by certain hospitals and welfare organizations. The tradition behind public education in this country never has followed the pattern of pauper schools in England and serious doubt exists that anyone connected with public education should regard it as a philanthropic enterprise. Notwithstanding the competent doctors and dentists who now render efficient service to the schools, the facts seem clear that public education faces a difficult problem in attracting an appreciable number of capable young men and women from these professions in view of more lucrative returns in other fields, especially if they are required to pursue additional although needed preparation in schools of education.

The last basic question relates to the way in which physicians and dentists naturally fit into the school organization, even if they are available. Obviously the answer to this question depends largely upon the personality of the individual; it also pertains to the two preceding problems. The professional preparation of doctors of medicine and dentistry differs widely from teachers and school administrators. Courses of instruction in medical and dental schools are exact and specific and directed toward the accumulation of vast stores of knowledge together with the application of this knowledge in treating individual patients. Programs of studies in teacher education encompass a wide range of

history, psychology, philosophy, and sociology especially designed to acquaint the prospective teacher with the winnings of the race thus far and to enable him to predict accurately future educational and social trends together with the utilization of these appreciations and understandings in teaching groups of children or adults. Many doctors and dentists try to avoid the numerous teachers' meetings and study groups regarded as normal procedures for the in-service education of teachers, whereas teachers and administrators often misunderstand the techniques employed by these health specialists in dealing with students and parents. If the physician or dentist actually performs the functions in schools for which he is trained, he runs the risk of currying disfavor with his colleagues in the community. Other school employees sometimes complain that the salaries paid these specialists, in terms of hours devoted to educational affairs, exceed the established schedule for teachers and administrators. The growing trend in education toward relying on the family physician and dentist for the health services and treatment suggests that physicians and dentists may be called upon for special lectures on health subjects, although the probability of an increasing number of these specialists as regular members of school faculties remains in serious doubt.

School Psychiatrists and Psychologists. Standard professional requirements for the psychiatrist include graduation from an approved school of medicine and a diploma from the American Board of Psychiatry and Neurology. Issuance of the diploma depends upon such factors as the applicant's educational preparation, hospital and clinical associations, contributions to professional literature, general reputation, affiliation with professional societies, and others. A competent psychiatrist represents a distinct addition to any school faculty in preventing mental and emotional disturbances among pupils and in giving advice to those suffering from mental ills who need further care or treatment. The high standards of professional preparation required of these specialists, however, indicate the improbability of school systems being able to afford qualified psychiatrists, except possibly on a part-time basis.

Few states have special certification requirements for the school psychologist. Generally speaking, he represents a person with a Master of Arts degree which includes special courses in psychology, the principles of learning, and educational measurement along with statistics. With additional preparation in the social sciences and community organization, he might make greater contributions to health education and to the education of the handicapped. In the absence of a school

psychiatrist, the well-trained psychologist may assist in solving some of the emotional problems that confront children, at least by screening those in need of further examination.

School systems fortunate enough to have both a psychiatrist and a psychologist should arrange for these two persons to work together as a team.

The School Nurse or Nurse-teacher. The school nurse per se functions largely in connection with the programs of health services and healthful school living with incidental contributions to health and safety instruction by suggesting to teachers certain areas in need of classroom emphasis. As a nurse-teacher she fulfills the obligations of a school nurse and takes her place as a regular member of the instructional staff of the school.

In many respects the efficient nurse-teacher represents a focal point around which the entire school-health program revolves. She helps to bridge the gap between the health services, healthful school living, and health and safety instruction ensuring the utilization of all experiences within these three areas for the best health education of youth. As a qualified nurse she serves as a liaison officer between the schools and the various official, voluntary, and private health organizations in the community. Parents and students respect her professional qualifications and usually follow the suggestions she makes relative to appropriate health care. School administrators and teachers have confidence in her judgment both with respect to services and to education.

The proficient nurse-teacher may be expected to (1) assist the superintendent or principal in the development of an adequate school-health program; (2) help with the health examinations by notifying parents, arranging schedules, and conducting screening tests; (3) supervise the follow-up program for the correction of remediable defects; (4) direct the program of teacher observation; (5) take charge of the health room, including first aid and care of sudden sickness; (6) guide students in the recognition and solution of their individual health problems; (7) advise principals on the hygiene and sanitation of school plants and processes; (8) enlist the cooperation and interest of parents in the school and community health; (9) coordinate the school with other health agencies; (10) establish effective measures for the control of communicable diseases at school in accordance with directives provided by the board of health; (11) participate in the preparation of courses of study for health and safety instruction; and (12) teach regularly scheduled classes in health.

The school nurse or nurse-teacher should have graduated from a

recognized school of nursing and be registered in the state where she works. Training and experience as a public-health nurse increase her effectiveness. On the strictly educational side, the nurse-teacher needs at least a baccalaureate degree with the equivalent of a major in health education which includes practice teaching. The National Organization for Public Health Nursing furnishes excellent standards for the preparation of school nurses.

Dental hygienists. Only a few schools employ dental hygienists, largely for prophylactic care. The qualified dental hygienist gives instruction to individual children or classes in the prevention of teeth defects, so commonly found in the periodic health examinations.

State certification requirements for dental hygienists are predominately low, which may account for her questionable place as a health educator in schools. Some states require at least one year of study in an approved school of dental hygiene following graduation from high school; two-year courses often lead to a certificate as Graduate Dental Hygienist. An increasing number of the better professional schools require a minimum of two years at an approved college or university as an educational prerequisite.

If the dental hygienist is to take her place in the school as a responsible educator, she will need preparation comparable to classroom teachers in the elementary school and specialists in the secondary school. Her status as an educator remains in doubt pending the improvement of standards in professional preparation, although several dental hygienists have become excellent health educators by pursuing appropriate study in this field.

Cafeteria Directors. The cafeteria director or supervisor may make significant contributions to health education. The influence of nutrition on normal growth and development and on general well-being suggests at once the prominent position held by this person. As a teacher of the subject she has information about the seven basic foods, balanced diets, caloric content of various nutrients, and other items relating to one of the fundamental needs of man. As a person in charge of the school cafeteria she has the opportunity to put her knowledge into immediate and functional practice. Few other persons employed by the board of education enjoy more favorable occasions to "practice what they preach."

The cafeteria director or supervisor should be a nutritionist with a broad background in the sciences that underlie health. Additional preparation will include the purchase and preparation of foods, the selection of equipment, an ability to get along with people, and a thor-

ough knowledge of educational procedures. Rapid developments in the science of nutrition make her in-service education a continuous and interesting process.

The Custodian. The infrequency with which administrators place the custodian on the school-health team illustrates a flagrant oversight in educational planning. The expert custodian teaches by example rather

FIG. 16. Some dental hygienists acquire competence in health teaching as well as in prophylactic care. (*Courtesy of the Columbia University School of Dental and Oral Surgery of the Faculty of Medicine.*)

than by precept. The way in which he attends to such matters as heating, lighting, ventilation, and sanitation serves as a pattern for teachers and pupils to follow—or to avoid. His personality in performing the daily tasks assigned to him often creates an atmosphere which permeates throughout the entire school. Frequently he shares more confidences of teachers and pupils than any other person in the building. In elementary schools he may be the only man to whom older boys may go with their personal problems. His influence is widespread; his educational responsibilities are enormous.[12]

Fortunately recent years have witnessed the establishment of numer-

[12] For further discussion of his duties and obligations, see pp. 216-217.

ous standards for the preparation of the school custodian.[13] First of all he must be a man of exemplary conduct. He must understand thoroughly the scientific and approved measures of building care and maintenance and, since these techniques change with surprising rapidity, his in-service education must continue with unceasing determination. Although he may not teach regular classes, his work stands as a constant reminder of experiences presented by teachers in health and safety instruction. Inviting him into the classroom to discuss various problems associated with his duties usually serves the twofold purpose of providing an experienced point of view on the subject and of sharpening his interest in the tasks for which he is responsible. By all means, the custodian deserves a place in the school-health program.

The Administrator or Executive. According to generally accepted definition, the school superintendent represents the chief school administrator with other central-office personnel in the line organization working immediately under him designated as administrators. The principal of a building is an executive, sometimes called the chief executive officer of a school. Many school systems make no distinction between the terms "administrator" and "executive," referring to a number of persons in the line organization as administrators.

Irrespective of the specific titles used within a school system, the fact remains that a successful health program requires effective leadership by the superintendent and his immediate administrative staff and sound guidance by the corps of building principals. To perform their respective functions efficiently, administrators and executives need professional preparation in health education.

Three basic reasons support the point of view that this preparation is essential. In the first place normal growth and development for each pupil constitutes the primary purpose for having schools and the various aspects of health education taken together form the core in the unfolding processes of maturation. In the second place the well-organized program of health education cuts across numerous subjects and services in the schools which must be articulated properly to obtain the best results—a factor unappreciated by many administrators accustomed to dealing with services and departments as relatively separate units. In the third place, health education in the schools must be coordinated

[13] H. H. Linn, L. C. Helm, and C. D. Graborkiewicz, "Check List Forms for Rating School Custodial Service." New York: Bureau of Publications, Teachers College, Columbia University, 1940.

with similar or related activities conducted within the home and community, thus introducing problems different from the typical routine of educational administration.

In the final analysis the administrator or executive must accept the responsibility for the success or failure of the educational program. He presents to the board of education for adoption the policies believed necessary to enrich educational opportunities. He selects the personnel to conduct the school activities and defines their duties. He provides the facilities and time required to conduct the activities. If school authorities firmly support the principle of normal growth and development among children, does this mean that education may profitably furnish instruction in academic subjects but have no concern about the nutrition of the child and his family, remain indifferent to the number and severity of remediable defects the child may have, or ignore the social and emotional conflicts which arise in the classroom? If the administration believes in a sound health program, does this relate only to textbook instruction, with possibly an irritable and maladjusted teacher in charge, custodial services in name only, and a cafeteria which dispenses unwholesome food at exorbitant prices? If the board of education has adopted the policy, upon recommendation by the chief school administrator, that the health program shall be coordinated with other agencies in the community, may the schools honestly continue with certain health activities without regard to similar activities conducted by other agencies, duplicate services performed by other organizations, or permit local pressure groups to use the schools for pecuniary gain? These problems illustrate the need for administrative understanding and wise direction in the development of health-education programs.

Any attempt to list the functions in health education normally belonging to the superintendent or principal would approximate a document almost as broad in scope as administration itself, because some aspect of health education touches almost every professional duty performed by these experts. In general terms, the following list summarizes the essential functions: [14]

1. To direct and coordinate all activities of the school-health program.

2. To secure the funds necessary for organizing and conducting the school-health program.

3. To provide an adequate and qualified staff in health education and to define the functions of each staff member.

[14] See also "The School Administrator, Physician, and Nurse in the School Health Program," *op. cit.*

4. To ensure the appropriate in-service education of staff members.
5. To inform professional schools of changing health needs deserving attention in preservice education.
6. To enrich the health program of the schools and environment by keeping the public informed concerning health needs and accomplishments.
7. To acquaint school personnel with health needs in the home and community.
8. To encourage the development of health councils in each school and a coordinating council for the school system.
9. To give administrative leadership in the organization and maintenance of an adequate and complete program of health services for pupils and employed personnel.
10. To provide and maintain a safe and healthful school environment for pupils and employed personnel.
11. To establish the essential cooperation with the health department in the conduct of school-health activities performed by the board of health.
12. To maintain a program of health and safety instruction, broadly conceived, scientifically determined, and based upon the coordinated functions of the entire school.
13. To stimulate a social and working relationship between the school-health program and other community agencies conducting similar health activities.
14. To articulate the school-health program with standards proposed by the state education department or state department of health.
15. To provide for the continuous appraisal of the school-health program according to the objectives sought and to continuously evaluate the objectives in terms of school and community needs.

Quite obviously most professional schools no more than scratch the surface in preparing the school administrator or executive for his role in health education. A few of these men and women have acquired some proficiency in organizing and conducting health programs through incidental in-service education (largely self-education), but such cases are so uncommon that they stand out as rare exceptions. A corollary of this proposition supports the view that school health never will attain the prominence it deserves until administrators and executives get behind the movement. Herein lies the crux of the entire school-health problem.

For almost a century every list of acceptable objectives in education has given conspicuous attention to health, yet few school systems would

receive a grade better than "tolerable" if an unbiased but competent survey staff, using the standards currently available, were to evaluate their programs of health services, healthful school living, and health and safety instruction. In the few instances where a thoroughly aroused pressure group has called the superintendent or principal to task for defects in the application of his avowed theory of educating the "whole" child, or for gross negligence in applying the commonly accepted and widely known principles of growth and development, his responses remind one of the small boy caught with his hand in the cookie jar. He either uses his personality and words to make light of the incident or presents an alibi—usually the latter. In either case his deportment illustrates faulty preparation by the professional school that permitted him to graduate, laxity by the state education department that gave him a license to direct educational affairs, or defects in his in-service education.

While he may lay the blame on the lack of facilities and the incompetence of employed personnel, he often resorts to that time-worn but intangible excuse of "an already crowded curriculum." But this excuse no longer proves valid. Any number of superintendents and principals have demonstrated the practicability of organizing a sound health program within the confines of a crowded curriculum. A group of persons interested in health education visited a school system in New York State where evaluation disclosed a satisfactory program of health services and healthful school living and special periods for health instruction throughout the eleventh and twelfth grades. A member of the evaluation staff commented favorably on the attention given to health instruction because New York, like most states, has a full curriculum and more than 90 per cent of the graduates from this high school go to college. The Director of Health and Physical Education quickly replied, "So long as Mr. M____ is the Superintendent of Schools in G____, you may rest assured that health instruction will receive emphasis in terms of facilities, staff, and time in the daily schedule." Public education needs superintendents and principals like Mr. M____.

Today health stands out as one of the most vital issues facing the people of this country. The political scene on national, state, and local levels reflects the stirring interest of leaders in the health of mankind. Social forces emphasize the urgency for increased and immediate activity in improving the nation's fitness and vitality. Economic interests place at the disposal of responsible groups huge sums to prevent and relieve the health hazards of youth and adults.

The school administrator or executive who would utilize the political, social, and economic resources of the community for the establishment of a truly functional curriculum might well begin with the inauguration of a sound health program. To exercise effective leadership in this direction, he must have adequate preparation. He must know how to organize and maintain a coordinated program of health services, healthful school living, and health and safety instruction in the schools and to articulate these programs with health activities conducted by various agencies in the community. The technical details of such matters as appraising health status, keeping the building clean and safe, and applying the scientific methods of instruction may be left to qualified experts employed for these purposes, but the responsibility for observing the necessity for improved health education and for translating this principle into effective action belongs squarely upon the professional shoulders of the school superintendent or building principal.

Summary

The success of any social activity depends largely upon the availability and competence of human resources to plan and conduct the enterprise. Leaders in health education have analyzed many of the problems associated with the field, but qualified personnel are needed to organize and maintain a satisfactory program.

All professions recognize the importance of certain basic information and skills acquired in colleges and universities with supplementation of this learning throughout the years of active duty. One aspect of professional preparation relates to preservice education; the other to in-service education.

Professional schools must (1) evaluate accurately the specific functions implied in a given profession; (2) organize the learning experiences of the student to equip him with the knowledge, skills, attitudes, and techniques essential to success in the performance of these functions; (3) observe certification or licensing standards imposed by states in which the graduate expects to work; and (4) remain constantly alert to trends since professional schools generally set the pace in fulfilling social needs and in creating a demand for improved procedures (sometimes called preserving the professional integrity of the institution).

Approved methods of in-service education include (1) advanced university courses or summer sessions, (2) workshops or working conferences, (3) institutes, (4) conferences with supervisors or persons able to give sound advice, (5) special lectures, (6) reading and reflective thinking, and (7) others.

The responsibility of the state in adopting certification standards for numerous persons in health education appears inevitable. Most states have few standards for the certification of school-health personnel.

Classroom teachers in the elementary school represent the most important persons in the health program. They need improved preparation in health, both at the professional school and through in-service education. State certification for classroom teachers might well give consideration to adequate preparation in health.

Special teachers of health in secondary schools and colleges are increasing in number, with certification standards being slowly established by state departments of education. To perform his duties with the greatest efficiency to the school and satisfaction to himself, the special health teacher must have a sincere interest in the individual health problems of students and a keen desire to instruct youth in the techniques of wholesome living. He takes an active part in all health activities planned by the educational institution or community. He becomes an active member of his professional association.

The health supervisor or coordinator is responsible for articulating the broad range of health-education activities within the school itself and with similar activities conducted by the home or community agencies. He may be employed by the board of education, board of health, a voluntary agency, or jointly by two or more of these organizations. Public health, rather than education, thus far has set most of the standards relating to the preparation and functions of the health supervisor or coordinator.

The physical educator oftentimes teaches health courses or directs the entire program of health education. To perform these functions effectively, he should have preparation comparable to the special health teacher or coordinator. Even though educational trends move in the direction of an increased number of health-education specialists, the physical educator will continue to hold a responsible position in the guidance and instruction of youth in the ways of health.

Many other teachers in the secondary schools have obligations in the health program. Teachers of biological science are needed who supplement their undergraduate preparation with graduate study in the areas of the health services, healthful school living, health and safety instruction, and community organization. Home economists make their greatest contribution to health education by instruction in nutrition, clothing, and homemaking and through supervision of the school cafeteria. Their sphere of influence should be extended to more students (both young men and young women) in secondary schools. Departmental

isolation prevents many teachers in the secondary school from taking an active part in health education.

Health-services personnel includes guidance counselors, school physicians, school dentists, school psychiatrists and psychologists, school nurses, dental hygienists, cafeteria directors, and custodians. The needs of youth in making proper adjustments to the home and community and in preparing for a satisfactory vocation impose upon the guidance counselor deep obligations requiring a thorough understanding of health education in schools and public-health education in the community. General opinion favors more physicians and dentists employed by boards of education, although economic problems and changing concepts regarding their place in the schools may alter this opinion in future years. If the school employs both a psychiatrist (probably part-time basis) and a psychologist, these men should work together as a team. In many respects the nurse-teacher represents the focal point around which the entire school-health program revolves; she needs special preparation in health education to supplement hospital training and academic degrees comparable to elementary and secondary teachers. Only a few schools employ dental hygienists, largely for prophylactic care; several dental hygienists have become excellent health educators with appropriate study in schools and colleges of education. The cafeteria director should be a nutritionist with a broad background in the related sciences which underlie health education. The expert custodian most certainly deserves a prominent place in the school-health program.

A successful health program requires effective leadership by the school superintendent and members of his immediate staff and sound guidance by a corps of building principals. The preparation of administrators and executives has been inadequate for the functions they must perform in health education. The future of health education rests squarely upon their professional shoulders in providing the opportunities for members of the staff to conduct their respective functions according to the needs and interests of pupils and adults in the school, home, and community.

Questions and Problems for Discussion

1. Name and describe the legal and moral obligations imposed upon all professional schools. For what professions are the preservice schools especially strong? Weak? How do you account for these strengths and weaknesses? What is meant by the professional integrity of an institution?

2. Several leading educators contend that the amount and nature of the

in-service education program largely determine the educational progress of the institution. List the characterizing features of a sound in-service education program. Assuming that you are the health supervisor or coordinator in a public-school system, how would you initiate in-service education for staff members?

3. What is meant or implied by state certification of professional personnel? In your own state what department or departments of government have the responsibility for issuing certificates or licenses for different professions? How should a state proceed in establishing certification standards for a given profession? What special certificates are issued in your state for health-education personnel employed by the schools?

4. List the special courses required by elementary classroom teachers to prepare them adequately for their duties in health education that should be given by the professional school prior to graduation (omit general education courses normally provided for all elementary teachers). Describe briefly the content or experiences in each course. If the special courses listed fail to encompass all the duties or functions in health education which elementary teachers should perform, explain how such teachers are to obtain competence in these professional areas either in other courses prescribed by the professional school or through in-service education.

5. Plan a program of professional education for the special teacher of health in the secondary school or college. Assume that he expects to major in this field and list the subject-matter experiences either as courses or areas. Indicate the number of semester hours' credit for each course or area. Consult a dean or registrar in an approved school of education concerning the practicability of your proposals. What steps should be taken to improve the professional preparation of special health teachers?

6. Using the standards established by the American Public Health Association as a guide, prepare a set of standards for the health supervisor or coordinator employed in schools or colleges. In what respects do your standards differ from those listed in answer to Problem 5 above?

7. Explain the special preparation in health education needed by the (*a*) physical educator, (*b*) teacher of biological science, and (*c*) home economist. Should you assume that these persons may be assigned by school administrators either as special teachers of health education or as contributing specialists to the health-education program? Give reasons for your answer.

8. What special preparation in health education should be acquired by the person employed by the board of education who is already certified or licensed as a (*a*) guidance counselor, (*b*) physician, (*c*) dentist, (*d*) psychiatrist, (*e*) psychologist, (*f*) graduate nurse, or (*g*) dental hygienist?

9. Discuss the reasons for and against state certification of cafeteria directors and custodians employed by the board of education. What special preparation in health education might be expected of these persons?

10. Review the chapter or better the entire text and list the functions in health education that normally belong to the school superintendent or

building principal. Prepare a plan designed to equip these officials with the professional preparation required to perform adequately their duties in health education. How might your plan be activated (keep in mind the practical aspects of professional-school standards, state certification, community interests, and other factors associated with the problem)? What next-step procedures do you propose?

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INDEX

A

Abdomen, examination of, 155
Accidents, 26, 38–39, 85, 86
Aches, in joints and muscles, 35
Administration, health direction of, 11
  protective, 5
Administrative policies, evaluation of, 304–305
Administrators, preparation of, 345–349
Adolescent, adjustment of, 88
  education of emotions in, 88
  emotional urges of the, 90
  glandular stimulations, 88
  indecision of, 88
  individual differences in, 90
  physical changes in, 88
  problems of the, 91
Adrenal glands, 82, 83
Adult education, in public education, 7, 211
Aged and infirm, provision for, 7, 27
Agencies, government, assistance, 6
    confusion in, 8
    factors responsible for, 8
    formation of new, 8
  social, 8
Air Force, medical provision for, 114
America, democratic government of, formation and perpetuation of, 6
  education in, 6
  objectives of, 6
  responsibilities of, 6
American Association for Health, Physical Education, and Recreation, 110, 326
American Council on Education, 324
American Dental Association, 110
American Hospital Association, 49
American Legion, 110
American Medical Association, 110, 203
American Nurses Association, 110
American Public Health Association, 110, 161, 203, 326, 330, 337
American Red Cross, 108, 122, 124, 175, 176
  support of, 122
American Social Hygiene Association, 108
American Society for the Control of Cancer, 108
American Society for the Hard of Hearing, 203
Analysis of school practices, 303
Anemia, cause of, 85
Anger, types of, 87
Anxiety, causes of, 72
Apoplexy, 26
Appropriations for state health programs, 116
Aristotle, 1
Army, medical provision for, 114
Arts and crafts in public education, 7
Aspirin, use of, 43
Assistance to the aged, 7
Asylums, 7
Athletic coaches, personal influence of, 40
Athletic heart, cause of, 195
Athletics and physical education, 290–293
Attendance officer, efforts of, 10
Attitudes, evaluation of, 314
  formation and influence of, 1, 4, 254–255
Audio-visual materials, 260
Audiometer test, 185
Authority for health-services discussed, 15

B

Behavior, emotional development, 87, 88
Biological inheritance, 65
Biological limits of life, 27
Biological science, understanding of, 1
Biology teachers, preparation in health, 333–336
Birth rates, increase in, 29
Blind and partially sighted, program for, 186
schools and classes for, 187
signs of visual deficiency, 187
Blood, examination of, 155
Board of education, 135
broadening of, 13
confusion resulting from, 13
health responsibilities of, 9, 133–136
powers and responsibilities of, 12–16
responsibility for handicapped, 200
Board of health, 130
contribution of, towards better food habits, 80
first appearance of, 2
Bobbitt, F., 275
Body structure, influence on weight, 72
Body types, 72
Bones, examination of, 155
Boston school-feeding program, 219
Boston School Committee voted compulsory vaccination, 170
Bovine tuberculosis, prevention and elimination of, 33, 75
Braille system, 187
Bronchitis, 26, 27
Bureau of Census, 114
Bureau of Indian Affairs, 114

C

Cafeteria directors, preparation for health, 343
California, aid in health education, 326
Calisthenics superseded by new program, 30
Calories, number required for health, 81
Camping, part of physical education program, 288
Cancer, 26
control of, 35–36
Carbohydrates for body heat and energy, 81
Cardiac defectives, 195
education of, 196
Care, of infirm, 27
of sudden sickness, provisions for, 175
standards, 176
Carrier (disease), 24
Cereals, 81
Certification, of personnel in public education, 324–326
state responsibility, 324–326
Chance mutations, 66
Change of activity, advantage in, 84
Chapman, J. C., 275
Chicago, first school classes for cripples in, 189
Child care, techniques of, 28, 67
Child development, outline, 94–105
education, 95, 97, 99, 100–102, 104
habits, 95, 97, 99, 100, 102, 104
physical, 94–98, 100, 101–103
senses and emotions, 95, 97, 98, 100, 102, 103
sociability and play, 98, 99, 101, 103, 104
Child health, greatest developments in, 2
Child mortality, 27
Child welfare, development of, 2, 7
Childhood diseases, 28
Children's Bureau, 114
beginning of, 2
jurisdiction over state aid, 2
Chromosomes, 64, 66–68
Citizenship, productive, 93
Classes, for gifted, 7
for handicapped, 7
Classroom teachers, preparation of, 327–328
Climate, related to longevity, 28
Clothing, 29
Colds, 27, 35, 69, 86
Commercial organizations, services of, 6

Communicable diseases, 67, 77, 89, 112, 131
control of, 124
Community agencies, 125–126
cooperation of, 10, 123, 241
responsibility of, 10
Community centers, activities in, 7
Community council, problems of, 125
Community health education, 40
Community hygiene, 10
Community welfare, 124
Companionship, needed by adolescent, 93
Compulsory correction of defects, 32–33
Compulsory health examinations, 32
Compulsory health insurance, 50–51
Concentration of workers, 24
Consciousness, loss of, 197
Construction and maintenance of schools, 211
building codes, 211
building construction, 214
building location, 212
evaluation techniques for healthful school living, 311
Convulsions, 197
Cooperative plan for voluntary health insurance, 49
Coordinator in health education, 212
Correction of defects, development of responsibility for, 7
use of community resources, 173
Corrective physical education, 189
Counts, G. S., 275
Course of study, preparation of, 257–259
divisions, 259
Court decisions, 11
present interpretation of, 14
Crippled and posture defective, 189
types of education, 190
Criteria, for selecting teaching material, 261
Cults, 39, 40
Cultural inheritance, 28
Custodians, advise on construction of school buildings, 212, 216, 217
should be on school-health team, 344

D

Dairy products, build body tissues, 81
Dance, in modern recreational programs, 30
Deaf and hard of hearing, 184
Death rate, 26–27, 29, 34
from accidents and disease, 85
Defects, effects of, 152
incidence of, 152
Degenerative diseases, 27
Dental care, 28, 32, 42–43, 47
problems contributing to, 43
Dental examinations by dentists, 167
Dental hygienists, employment of, 15
as health teachers, 343
Dentist, 5, 15, 131
employment of, 15
as health teacher, 262
Department of health, 124, 136
Diagnosis, 35, 86
Diaries, use in evaluation, 303
Dickens, Charles, 1
Diet, adequate, 41, 72
for growing child, 80, 86
Diphtheria, 23, 67, 75, 77, 85, 195
Direct versus incidental teaching, 242
Discipline, emotional, 31
Disease, 65, 72, 85
Dix, L. H., 274
Draft statistics of 1917–1918, 2
rejections, 32
Dramatics, as feature of modern education, 7
Driver education, courses recommended for secondary schools, 38

E

Early childhood, normal and developmental traits in, 88
Early diagnosis, 35
Economic factors, growth and development influenced by, 70–72
Education, 4, 7, 8, 13, 25, 27–29, 33, 34, 38, 40, 45, 46, 56, 65, 67, 73, 76, 80, 87, 93, 112
of handicapped, 132–133
relation to services, 148–149

Educational outcomes desired, 10
Educational Policies Commission, 275–277
Educational policy, 13
Eggs, build body tissues, 81
Emergency care, policies controlling, 15
Emotional behavior, 87, 90
Emotional control, 87
Emotional development, 11
Emotional disturbances, 29
Emotional satisfactions, 76
Emotionally atypical, 198
Employment for youth, 27
Endowed foundations, 122–123
Energy, milk source of, 81
England, health movements in, 2
  improved statutes relating to health of youth in, 2
  Provision of Meals Act passed in, 2
  responsibility for medical inspection of school children in, 2
Environment, 65, 67, 68, 88
Epidemics, 24
Epileptics in classroom, 197
  education of, 197
Epsom salts, 43
Eugenic sterilization, 53
Euthanasia, opinions on practice of, 53–56
Evaluation, 255
  and administrative policies, 299, 304
  clinical approach, 300
  current trends, 299–300
  of health and safety instruction, 313–316
  of health services, 305–311
  of healthful school living, 311–313
  and objectives, 299
  quantitative and qualitative factors, 299
  statistical approach, 300
  types of, 302–304
  validity, reliability, and objectivity, 301
Excursions, an education in community interests, 261
Exercise, value of, in health terms, 27, 30–31, 76

F

Facilities for guidance in public education, 7
Fads, health, 39, 40
Family physician, importance of, 162–164
Fatigue, physical, 31, 35, 86
  prevention of, 5, 84
Fear habits, how acquired, 87
Federal acts, 11, 113
Federal agencies, 67
Federal funds, 136
Federal Pure Food and Drug Act, 44
Federal Trade Commission, 44
Feeble-minded included in custodial group, 199
Feet, examination of, 155
Fertilization of ovum, 64
Fire drills, 209
First aid, evaluation of, 310
  for injuries, 131
  provisions for, 175
  standards, 176
First World War, physical fitness, 32, 70, 111
Fish, builds body tissues, 81
Follow-up for remediable defects, 131
  functions, 172
  procedures in evaluation, 310
  role of teachers and nurses, 172
Food, improving quality of, 29, 41, 65, 80, 85
  prices, 81

G

Games essential in modern education, 30
Genes (*see* Chromosomes)
Geographical conditions, effect on health, 69
Glands, 81–83
  examination of, 154
Goiter, 69
Government, responsibility for handicapped, 200
Group discussion part of educational program, 7
Growth, conditions affecting, 63–106, 195

Growth, definition and scope, 64–66
interruptions in, 77
plateaus, 72
rate of, 76
Guidance, clinics, 42
in evaluation, 309
in meeting new problems, 88
preparation of counselors, 336
Gullion, B. B., 292–293
Gymnastics superseded by games and sports, 30

H

Habits, evaluation of, 314
influences affecting, 4, 254–255
Handicapped, education of, 181
administrative principles, 183
beginnings of, 182
classification, 184
emotional appeal of, 183
Health, 3, 5, 10, 31, 65, 107
of youth, statutes relating to, 2
Health adviser, 45
Health agencies, 107
cooperation with department of education, 140
Health and safety instruction, 38, 86
in adult education, 250
brief history of, 234–239
changing views of, 14
in colleges and universities, 247–249
definition of, 239–240
description of, 5
in elementary schools, 242–244
in health education, 4
organization for, 240
and physical education, 283–286
purpose of, 135
responsibility for, 135
in secondary schools, 245–247
topics included in, 132
Health care, 30–31, 131
Health certificates, 24
Health councils, function of, 140–141
qualified persons on, 141
selection of, 140
Health education, 1–5, 9–11, 15–16, 27, 28, 32, 43–44
definition of, 4
objectives of, 93
Health examinations, 27, 35, 131
administrative principles of, 155–165
or appraisals, 151
and development, 154
educational implications of, 155
frequency of, 159
function of, 152
function of teachers in, 158
general practitioner versus specialist, 162
items in, 154–155, 166
legislation on, 153
objections to, 160–161
preparation for, 156
presence of parents, 157
school physician versus family physician, 162
standardization of, 160
use in evaluation, 303–306
Health histories, evaluation of, 307
items in, 165–166
Health inspections, 168
continuous, 168
morning, 168
Health insurance, 46, 48–51
Health interests and needs, 240–241
Health knowledge tests, 315–316
Health observations, 167–169
nature of, 168–169
by teachers and nurses, 167
Health officials, 24, 124
Health problems, 1, 10, 24, 27
Health program, requirements of, 10
Health records, in evaluation, 303
Health regulations, 24
first passage of, 2
Health rooms, 176, 216
Health services, 4, 7, 14, 15, 45
administration of, 137
agencies involved, 131
definition and scope, 149–151
development of, 148–151
for employed personnel, 176–177
evaluation of, 305–311
and physical education, 278–281
responsibility for, 177–178
Health specialist, definition of, 16–17
Health supervisor or coordinator, preparation of, 330–332

Health teachers, preparation of, 328–330
Health treatment, explanation of, 135–136
  responsibility for, 136
Healthful school living, 4, 5
  contribution to health education, 210
  definition and scope, 209
  evaluation of, 312
  factors associated with, 131–132
  and physical education, 281–283
Hearing, 85
  examination of, 154
Heart, athletic, 195
  disease, 26, 34–35, 85
  examination of, 155
Heating, 81, 215
Height-weight-age tables, 72–73, 192
  use of, 155
Hereditary differences, 23
Heredity, 27, 67–68, 70
Historical implications of growth and development, 66–67
Home economists, preparation in health, 333–336
Homework, problems connected with, 223
Hookworm, 69
Hoover, H., 2
Hormones, 82
Hospital service, 28, 47
  plan of health insurance, 49
Hospitalization, 47
Hot lunches, 192
Housing, 67, 69, 71
  and health, 210
Hugo, V., 1
Human Betterment Foundation, 53–56
Hygiene, 235–236
  elements of, 1
  instruction, 2
  types of, 10

I

Idiots, physical status of, 70
Illness, effect on development, 65
Imbeciles, 70
Immigration, 23
Immunization, 131
  compulsory features, 170
  definition of, 169
  effectiveness of, 170
  in evaluation, 310
  responsibility for, 171
Impaired vision, 188
Implications (health), significance of, 1
Incurables, 53
Individual differences, 22, 73
Industrial arts and safety, 7
Industrial revolution, 24
Industrialization, relation to longevity, 28
Infancy, 65
  emotions in, 87
  growth in, 78
Infant diseases, 28
Infant mortality, 27
Infantile paralysis (*see* Poliomyelitis)
Infected tonsils, 86
Influenza, 23, 27, 195
Information, need for, 252–254
Inheritance, 66–67, 72, 88
Inhibited child, 88
Instruction in parenthood, 76
Insurance plans, 46
Intelligence, growth and development influenced by, 70
Interests and needs, 251
Interviews, 260
  in evaluation, 303
Inventions, influence of, 6

J

Jersild, A. T., 63
Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, first chairman of, 3
  goals established by, 3
  leadership by, 3
  plans formulated by, 3
  in teacher preparation, 326
  written material by, 3

K

Keene, C. H., 272
Kidneys affected by diphtheria, 85
Kindergarten, in education, 7
Kiwanis clubs, 190
Knowledge, 1, 4
  acquired, 1
  evaluation of, 315

L

Late childhood, 89–90
  dependability in, 89
  efficiency in, 89
  need for guidance in, 90
Lavatories, 215
Leadership, 28
Legislation, permissive, 11
  regulations, 14, 115, 136
Leisure, 71
  education for, 293–294
Length of school day, 223
Librarians, and others in public social services, 8
Life and health, 1
Life expectancy, 27, 28
Lighting, 215
Linn, H. H., 312
Local government, 116–118
  powers of, 116
  principles of, 118
  responsibilities delegated by, 11, 116
  services rendered by, 118
Loss of weight, causes of, 72
Low economic status retards development, 67
Lungs, examination of, 155

M

McNemar, Q., 86
Maintenance of school plant, evaluation of, 312
Malaria, 23, 69
Malnutrition, 67, 70, 72, 191, 193, 194
Mann, H., 325
Mantoux test, explanation of, 33, 34, 86
  reference to, 196
Massachusetts, teacher education in, 325
  School and Home for Crippled and Deformed Children, 189
Measles, 35, 75, 77, 85, 89, 195
Measurement (*see* Evaluation)
Meat, essential for building body tissues, 81
Medical adviser, 44–45, 86
Medical care (attendance), 37, 45, 47–48, 70
Medical economics, 46
Medical inspection before and after 1900, 2
  England placed responsibility for, 2
Medical science, 32
Medical-society plans for voluntary health insurance, 49
Medical treatment, 15
Mendel's test, 33
Mental development, 11
Mental health, 41–42
Mental hygienists, 199
Mental institutions, 42
Mentally deficient, instruction in special classes, 197
Mentally handicapped, 183
Methods of health instruction, 250–257
Michigan provides assistance in health education, 326
Migration of families, 24, 66
Military services, physical fitness for, 30, 31
Milk, essential for growing children, 80–81
Miller, B. W., 313
Minerals essential to body functioning, 81
Minnesota authorized medical attention for crippled children in 1897, 189
Modern civilization, complexities of, 9
Morbidity rates, 24, 25, 37
  statistics, 25, 26
Morons, physical status of, 70
Mortality rates, 24, 25, 37
  statistics, 25, 26
Mosher, C. D., 67
Motor development in early childhood, 92

Municipal departments, 40
Municipal university in public education, 7
Muscles, examination of, 155
Music as public recreation, 7
Mutations, chance, 66

N

Nasal passages, examination of, 154
National Committee for Mental Hygiene, 108
National Congress of Parents and Teachers, 174
National Education Association, seven cardinal principles, 274
National Foundation for Infantile Paralysis, Inc., 37, 108, 203
National Health Council, 125
National health insurance, 49–51
National inheritance, 28
National Safety Council, Inc., 22
National Society for Crippled Children and Adults, 203
National Society for the Prevention of Blindness, 108, 187, 203
National Tuberculosis Association, 108, 196, 203
National vitality, 22–23
Nationality, relation to growth and development, 68–69
Navy, medical provision for, 114
Nervous strain, 35
Nervous system, examination of, 155
New York, 189, 326
New York City, 170, 219
New York State Education Department, 246
Nurses, efforts of, 5, 10, 15
  care, 37
  employment of, 15
  as health teachers, 262
  for public social service, 8
  in school health program, 131
  services, 28
Nutrition, 27, 35, 41, 65, 67, 76, 81
  classes, 191–192
  examination of individual eating habits, 155
Nutrition, problems, 80
  programs, 86
Nutritionists, 22
Nyswander, D., 301

O

Oberteuffer, D., 272
Observation, in evaluation, 302, 307–308
Occupational diseases, 71
Official agencies, 9, 32, 107–108, 124, 125, 130, 135, 136
Ohio provides assistance in health education, 326
Orange juice, vitamin content, 81
Organizations, need for sound policies, 8
Organized public health, 110–113
  definition of, 110
  established by Federal government, 110
  field of, 112
Orthopedic physician, 190
Overweight, 72, 192
Ovum, fertilization of, 64

P

Panel discussions, 260
Parent-teacher associations, 110, 124
Parenthood, instruction in, 76
Parents, 5, 10, 131
  policies controlling advice to, 15
  presence at examinations, 157
Parsons, F. G., 67
Pasteurization, 33
Patent medicine, risks in using, 44
Pearson, K., 68
Pediatricians' opinions on mid-session feeding, 193
Pellagra, 69
Pineal glands, 82, 83
Penicillin effective in certain types of pneumonia, 37
Pensions, old-age, 29
Personal hygiene, 2, 10
Pharmacist, consultation with, instead of physician, 43

Physical activity and heart ailment conditions, 35
of childhood, 89
Physical condition, 27
Physical development, 11
in early childhood, 89
Physical education, 30, 31, 36, 40
and athletics, 290–293
in colleges, 289–290
in elementary schools, 286–288
and health instruction, 283–286
and health services, 279–281
and healthful school living, 281–283
and physical training, 277–279
purposes of, 271–277
and recreation, 293–297
in secondary schools, 288–289
Physical educator, preparation in health, 332
Physical fitness, 30–31
Physical reeducation, 190
Physical training, 269
and military service, 269
as physical education, 277–279
Physically handicapped children, educational provision, 183
Physicians, 5, 43, 72, 131
as health teachers, 262
for schools, 15
Physiology, 2, 234
opposition to introduction of, 14
Physique, inheritance of, 73
wise use of, 73, 75, 76
Pirquet's test in tuberculosis, 196
Pituitary glands, 82, 83
Plato, 1
Playgrounds, improvement in, 7
Pneumonia, 26, 36, 37, 85, 86
Poisoning due to occupational hazards, 71
Poliomyelitis, 35, 37, 85
Posture, examination of, 155
physical and psychological implications, 31, 37, 89
Poultry, body tissue builder, 81
Practicing physicians, 124
Prenatal life, conditions affecting intelligence of child, 70
Prepayment plan of voluntary health insurance, 48
Pressure groups, 7, 133
Prevention of degenerative heart diseases, 35
Principles of education, 10
Principles of method, 251–257
Private health agencies, 107, 109, 125, 130, 135, 136
Private medical practice, 28, 32, 47
Professional associations, 107
agencies, 109–113, 125
Professional preparation for health education, 320–321
administrators, 345–349
biologists and home economists, 333–336
classroom teachers, 327–328
health-services personnel, 336–345
health supervisor or coordinator, 330–332
health teachers, 328–330
in-service education, 321, 324
schools, 321
state responsibility, 324–325
Program organization to promote health, 11, 221–229
Proteins in certain foods, 81
Provision of Meals Act, 2
Psychiatrist, nature of assistance by, 10, 15, 42, 199
Psychological examinations, relation to health examination, 167
Psychologist, efforts of, 5, 131
Puberty, examination of, 155
Public health, organized, 28, 29
Public-health authorities, 25
Public-health department, 40, 46
Public-health education, 1, 2, 5, 7, 23, 24, 32
Public-health measures, 27
Public-health ordinances, 24
Public-health organizations, 24
Public-health workers, 26
Public opinion, 31–33
Public social service, community support of, 8
professional staff for, 8
Public welfare, development of, 7

R

Reactions of children, 88
Reading assignments, 259
Recreation, 7, 29, 30, 71
  and physical education, 293–294
Regulations, official, 11, 14, 136
  authority of, 11
  establishment of, 11
  public support of, 14
Rehabilitation, types in need of, 199
Relaxation important for health, 27, 83, 84
Relief agencies, 124
Remediable defects, 9, 27, 70, 72, 78
Research, medical, 36
  nutritional, 41
Respiratory infections, 26, 27
Responsibility of school to provide food and clothing, 9
Rest, 76, 83, 84, 185
Rest rooms, 176, 216
Retarded children, 197
Rheumatic fever, signs of, 35, 69, 195
Rochester established first school-feeding program in 1903, 219
Rogers, J. F., 167
Rotary clubs, 190
Rugen, M. E., 301
Rural plan of voluntary health insurance, 49
Rusk, H. A., 278
Ryan, W. C., 199

S

Safety education, 4, 5, 27, 28, 38–39, 86, 238
Sanitariums, 33
Sanitation, 1, 112
  of school plant, 2
Scarlet fever, 35, 67, 85, 195
Scheinfeld, A., 66
Schick test, 75, 86
School administrator, 9, 38, 133
  responsibilities of, 138–139
  selection of, 139
School architects, 209, 211
School committee, responsibilities of, 9
School dental hygienists, preparation for health, 343
School dentists, preparation for health, 337–341
School feeding, 2
  aspects of, 5
  history of, 217
  program, 131
  standards for, 220
  values of, 218
School health, environment, 11
  examinations, 123–127
  need for coordination, 123–125
  place of, 5
  planning, 130–145
  policies, 11, 15
  problems, 124
  programs, 11, 72, 130–142
  responsibility for, 9, 93
School nurses, observations, 167
  preparation for health, 342
  role in follow-up, 172
  and screening tests, 169
School physicians, versus family physicians, 162
  preparation for health, 337–341
  types, 164
School plant, maintenance of, 312
School psychiatrists, preparation for health, 341
School psychologists, preparation for health, 341
Science, modern, 27, 28, 67
Screening tests, in evaluation, 308
  for sight, 187
Seasonal growth of school children, 77
Seating arrangements for schoolrooms, 223
Second World War, influences of, 38, 67, 70
Secondary school in public education, 7
Selective service data, 31, 32
  examinations, 33
Self-appraisal, in evaluation, 303
Self-direction, 43, 44
Self-medication, 43–44, 46
Self-prescribed diets, 86
Services, relation to education, 148–149

Sex differences, 86–87
Sex glands, 82, 83
Shelter, necessity for adequate, 29
Sight, effect of scarlet fever on, 85
Signs, of deafness, 184
of illness or defects, 131
Silicosis, 71
Size of classes, 223
Skills, effect on health, 254–255
evaluation of, 314
Skin, examination of, 155
Sleep, 72, 77–78, 83–84, 185
Smallpox, 21, 67, 69, 75, 170
Snellen chart, 187
Social agencies, need for sound basic policies, 8
Social dancing, 84–85
Social development beneficial to family life, 70–72
explanation of, 91
guidance for, 91
school attendance influences, 92
Social planning, 29
confused basic policies in, 78
lack of coordinated balance in, 8
programs in, 7
Social welfare, 107
Social workers, 193
Socialized medicine, 48
Socially atypical children, classification, 199
Socially handicapped, provision for, 183
Special education for exceptional children, 183
schools and classes, 182–185
Specialists for public-health departments, 112
Speech defectives, types, 190–191
clinics, 191
correction of, 191
education of, 191
Spencer, H., 274
Sperm, 64
Sports, 7, 30
clubs, 290
days, 290
Springfield, community cooperation for dental care, 174
Stammering, corrective measures, 190–191
State, agencies, 67
funds, 136
government and public health, 115–116
health councils, 125–126
medicine, 48
and public education, 7
regulations, 11
and teacher preparation, 324–326
Student committees, 260
Stuttering, correction measures, 190–191
Sudden sickness provided for in school-health program, 131
Sulfonamides, 37
Summer Round-up, voluntary health agency for small children, 174
Superstitions, effect on health, 39, 40
Supervisor of health education, 212
Surplus foods, practices affecting, 81
Surveys, in evaluation, 302

T

Taboos, 1
Tax funds for public enterprise, 7
Teacher, 5, 8, 9, 15, 40, 64, 131, 133
function at examination, 158
health, 224–226
observations, 167
relations with pupils, 226–229
role in follow-up, 172
and screening tests, 169
Teaching materials, 259–262
Teeth, examination of, 154
Temperance included in health education, 2
Terman, L. M., 86
Tests, in evaluation, 303
Thymus gland, 82
Thyroid gland, 82–83
Toilets, sanitary, 215
Tomato juice, vitamin content, 81
Tonsillitis, prevention by health education, 27
Tonsils, examination of, 154
Toxins produced by illness, 65, 85

Transportation in relation to disease, 24
Treatment, preventive measure in early stages of sickness, 35, 86
Tubercle bacillus, spread of, 33
Tuberculosis, 26, 27, 33, 34, 71, 75, 86
conditions conducive to, 75
open-air classes, 196
schools for, 197
tests for, 124, 196
Turnverein, influence in health education, 30
Typhoid fever, 23, 69

U

Underweight tests and averages, 192
United States, Bureau of Census, 34
cooperation of Federal government, 113
Office of Education, 112, 114, 203, 326
Public Health Service, 22, 111, 113
Surgeon General, 50

V

Vacations benefit health, 78
Vaccination, 21, 131
(*See also* Immunization)
Ventilation, 215
Veterans Administration, 114
Vision, examination of, 154
Visiting teachers, employment of, 15
Vital statistics, 25
interpretation of, 25–26
Vitamin units, 81
Voluntary health insurance, 50
Voluntary health organizations, 2, 6, 9, 28, 32–33, 46, 107–109, 124–125, 130–131, 135–136
administration of, 118
classification of, 120
development of, 120–122
Voluntary health organizations, explanation of, 108
function of, 108–109

W

Water supply, adequate and safe, 215
Weight, alone, not a safe measurement of nutrition, 193
annual gain, 76
in evaluation, 308
loss of, 72
Welfare organizations, 46, 124
contribution of, 80
Wetzel Grid technique, 72
White House Conference, established standards, 2
Whole child, development of, 73
Whooping cough, 35, 77, 89
Williams, J. F., 3–4, 271
Woman's Christian Temperance Union, 235
Women's Athletic Section, 292
Wood, T. D., 4, 250
Work, relief to unemployed, 7
satisfying occupations, 27, 167
Worry, effect on health, 35, 72

X

X-ray examinations, 34, 86, 124
examination for tuberculosis, 196

Y

Yellow fever, elimination of, 21, 67
Youth, education of, 8–9
happy home life for, 9
health of, 2
health needs of, 9
necessary learnings for, 9
personal habits of, 89
self-reliance for, 9
social-minded personality for, 9